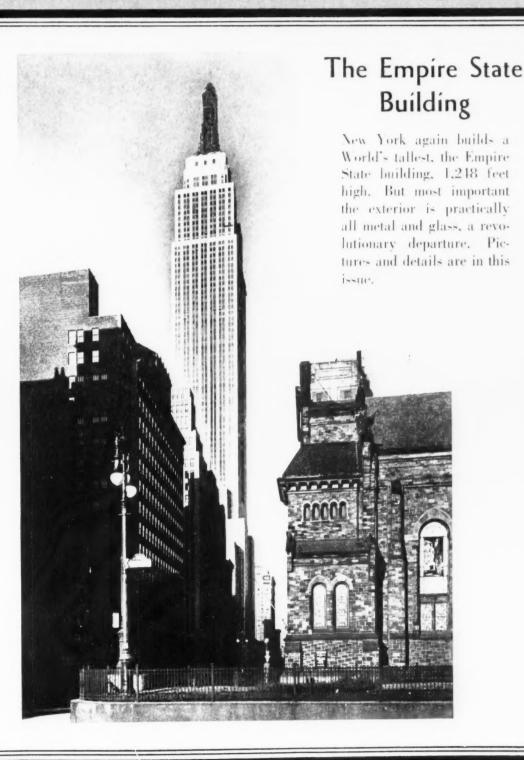
American Artisan

THE WARM AIR HEATING AND SHEET METAL JOURNAL



INDEPENDENT

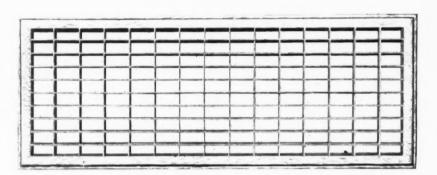
ANY SIZE

"Fabrikated" COLD AIR FACES

MPROVED AGAIN

"Fabrikated" Cold Air Faces are made in the widest range of sizes, and in any finish. Note in table below that minimum size floor openings admit maximum flow of air. Practically any other size can be furnished.

Reund Pipes	Face Size Fleor Opening Inches	Open Area Square Inches
12 meli pape of pipe 113 sq. in-	12x12 12x14 6x24 6x30	118 139 118 148
14 inch pape of pipe 154 sq. in.	14x14 12x18 8x24 9x24 7x30	163 180 159 180 174
16 inch pape of pape 201 sq. in.	16x16 10x24 12x24 8x30 9x36	215 201 240 201 226
18 to happer of pipe 254 sq. in.	18x18 14x24 10x30 11x30 12x30	273 282 254 278 301
20 meh pipe of pipe 314 sq. in.	20x20 16x24 18x24 13x30 14x30	337 323 365 328 354
22 ment paper of paper 380 ~q. in.	22x22 20x24 15x30 16x30	410 404 381 407
24 me paper of paper 4.2 sq. fm.	24x24 18x30 20x30	488 456 508
26 meh paper of pipe 530 ser, in	26x26 22x30 24x30	573 561 613



A further advance has been made in "Fabrikated" design and construction, now better than ever presents a wider edge, more attractive and finer finished machine assembled and band ends turned over, stronger . . . openings are smaller, more modern looking, yet affording more than 82% open area . . . All these improvements at no increase in price.

Send for catalog showing complete line of Registers, Faces and Grilles.



INDEPENDENT REGISTER & MFG. CO.

3741 EAST 93RD STREET . CLEVELAND, OHIO



ANNOUNCEMENT



The Midland Furnace Company today is twice as large as it was, having consolidated with the Success Heater Manufacturing Company of Des Moines, Iowa.

The Success Heater Manufacturing Company has been manufacturing Success steel furnaces for the past sixteen years and now both the Midland and Success lines will be manufactured in the modern daylight Midland factory at Columbus, Ohio.

A Western Division will be continued at Des Moines, Iowa, where a complete stock of furnaces will be carried to serve all dealers west of the Mississippi River.

The combined volume of the two companies places the Midland Furnace Company as the second largest in the steel furnace industry and will enable us to render a service to our dealers second to none. Our furnaces will be the last word in steel furnace perfection. Our engineering service and advertising helps can now be made equal to the best and far superior to the most as it is only by means of larger volume that any company can render the best service to its customers.

Just as banks and railroads must merge to improve service so must furnace companies consolidate their manufacturing and their resources. There is a growing demand for "Cleaner Heat" and it has been met by the expansion of this company.

MIDLAND FURNACE COMPANY

Columbus, Ohio

Des Moines, Ia.

REAL BUSINESS



TOWEL AND LINEN SERVICE FOR EVERY REQL

September 2, 1930

Steel Sales Corporation, 129 S. Jefferson Street, Chicago, Illinois

Attention: Mr. W. J. Farrell

Gentlemen:

C.G.Parks

The accompanying photograph shows some of the Monel Metal wet linen trucks in service at our plant. We recently purchased thirty of these trucks.

Monel Metal was specified for this equipment because it's high tensile strength and absolutely rust proof properties make it an ideal material for laundry use.

Undoubtedly you will be interested to know that we are also using Monel Metal washers, dryers, starch cookers, etc., and that they are all giving excellent service.

We are entirely satisfied that any investment in Monel Metal equipment is a profitable one.

Yours very truly,

AMERICAN LINEN SUPPLY CO.

By CyPark

Type of Monel Metal laundry chute that is simple in design—but very profitable to make.





Right: Monel Metal laundry chutes and tables. These chute jobs are usually big and built to meet special requirements.

Left: Monel Metal is ideal for laundrychutes because its glasssmooth surface protects the most delicate fabrics.



Pails are one type of many utensils modern laundries prefer to have made of rustproof Monel Metal.



Dippers can be readily made of Monel Metal and sold at good profit.



THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

Starch soaking table with Monel Metal top, basin and covers. A good example of modern sheet metal working.

FOR WIDE AWAKE SHEET METAL CONTRACTORS IN MONEL METAL LAUNDRY EQUIPMENT...

Laundry industry now using more than 15,000,000 pounds of Monel Metal – Sheet Metal Contractors Cashing In on Fast Growing Demand

ENTERPRISING sheet metal contractors have found a sure-fire way to take up some of the slack resulting from general business conditions. They are capitalizing the popularity of Monel Metal for modern laundry equipment.

Latest figures reveal that the laundry industry of the country is now using more than 15,000,000 pounds of Monel Metal laundry equipment, a considerable portion of which has been specially fabricated by sheet metal workers. Despite this immense tonnage, however, there is every indication of a big unsatisfied demand...laundries continue to install new Monel Metal equipment in ever increasing quantities.

This popularity of Monel Metal is due to the insistence of American housewives on an improved standard of laundry service and the realization of laundryowners that Monel Metal equipment promotes a high quality of work. Their experience has also proved that Monel Metal effects definite economies in operation and maintenance. Monel Metal, being rust-proof and corrosion-resistant, protects fine fabrics from spots and stains. At the same time, it is easy to clean and keep clean, while its steel-like strength and durability insure years of repair free service.

Sheet metal workers are particularly interested in the sales opportunity in the laundry field. Many of them have discovered that commercial laundries must have many types of equipment which can be readily fabricated from Monel Metal. Monel Metal laundry chutes, table tops, soap tanks, starching equipment, trucks and utensils can be readily sold to laundries with worthwhile profits to the sheet metal contractor.

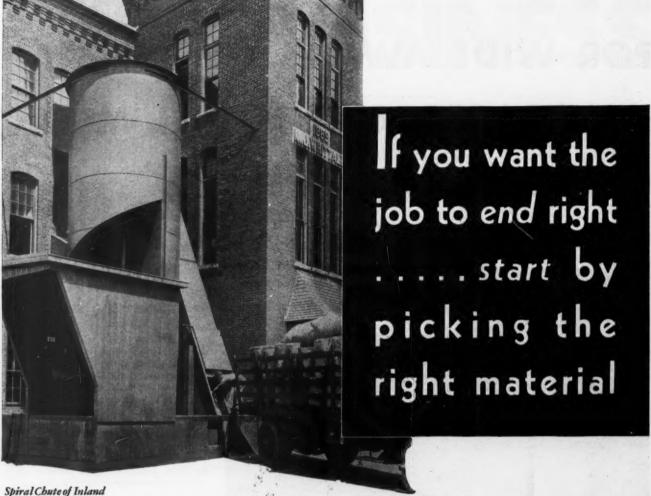
Monel Metal laundry trucks made by the ACORN SHEET METAL WORKS, Chicago, for American Linen Supply Co., of that city.

Monel Metal is a registered trade mark applied to a technically controlled nickel-copper alloy of high

MONEL METAL

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.





Spiral Chute of Inland Copper Alloy Steel Sheets at the plant of the M. J. Whittall Company of Worcester, Mass.

Save with Steel



GOOD sheets and other materials, properly chosen, are the first essential in pleasing the customer. Because in his eyes no amount of good workmanship can cover up materials poorly chosen for the job.

If you want every contract to be a boost to your reputation and a bid for more business, you must start the job by choosing the materials best suited for it.

By standardizing on Inland as your source of supply you can be sure of getting the proper steel needed for the

Bands

Sheets

purpose... you can be sure that every sheet in the lot is of the same high grade... because Inland controls every part of steel-making from mine to sheet; because on every problem it brings to bear almost 40 years of experience; and because its plant embodies complete research and manufacturing facilities, and the most modern methods.

Inland men will work with you on every specification—Inland sheets will work for you on every job.

Track Accessories

Rivets

Billets

INLAND STEEL COMPANY

38 SOUTH DEARBORN STREET, CHICAGO

Rails

Structurals

or court barring in a single framework

Plates

Say you saw it in AMERICAN ARTISAN-Thank you!

SA ON LEGATOR

YEARS AHEAD OF OTHERS



The insistent demand for more healthful indoor living conditions has been fully satisfied by this improved heating system—truly the furnace "Supreme."

Experienced designers, skilled craftsmen and high-

est quality materials have been combined to produce a furnace that is an outstanding achievement in the furnace industry. Write or wire for complete details.

AGRICOLA FURNACE COMPANY, INC. - - - Gadsden, Alabama

Offices in Principal Cities

Say you saw it in AMERICAN ARTISAN-Thank you!

Justomers today.

look to nationally advertised products for dependability," Says ARTHUR G. MARX, Detroit, Mich.

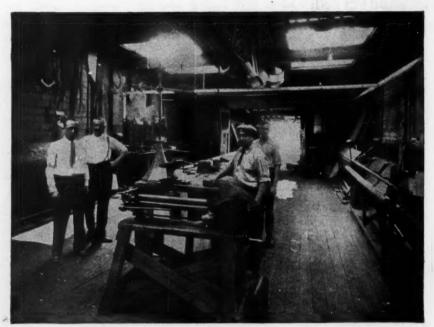
RTHUR G. MARX of Detroit, A prominent in the sheet metal contracting field, says:

"Customers today look to nationally advertised products for dependability. And experience has shown us that the best way to hold the confidence of customers is to specialize on such products."

"For some years we have standardized on Anaconda Sheet Copper and have found it to be holding a reputation for satisfactory service."



Residence of Col. J. G. Vincent of the Packard Motor Car Co. Sheet metal work of Anaconda Copper was installed by Arthur G. Marx.



a sure-fire way of building and . Work shop of Arthur G. Marx, 8108 Mack Ave., Detroit, Mich. This efficient plant handles a large volume of copper sheet metal work.

By constantly reminding homeowners of the quality and durability of Anaconda Copper, The American Brass Company, through its advertising, is helping to convince the public that quality material and skilled workmanship save money.

other contractors the

country over, have found that specializing in Anaconda Copper goes a long way toward developing a sound business. Let us tell you about the free selling helps which we have prepared for contractors handling Anaconda Copper. Address The American Brass

Like Mr. Marx, many ANACONDA Company, General Offices: Waterbury, Connecticut.

ANACONDA COPPER

Look for the name ANACONDA in every sheet and strip. Leading Supply Houses carry it.

Sure Ways to Lower Your Costs

EVERY furnace in the Moncrief line is well made, attractive,—sells easy, because it looks good to the purchaser. That means lower sales costs.

All contact edges of Moncrief Furnaces are ground and fitted, with sec-

tions assembled and shipped as a unit. Lower installing costs.

Then, you can depend on every Moncrief Furnace being so well made as to give full satisfaction to the home owner. Service costs reduced to a minimum.

Our Proposition will interest you. Write for particulars.

THE HENRY FURNACE AND FOUNDRY CO.

3471 East 49th Street

Cleveland, Ohio

We supply everything used in a warm air heating job

MONCRIEF Distributors

Carr Supply Co., 412 N. Dearborn St. Chicago, Ills.

The Henry Furnace & Foundry Co. Pittsburgh, Pa.

Frontier Water & Stream Supply Co., 366 Oak St.; 481 Ellicott St., Buffalo, N. Y.

Monerief Heating Co., 947 Massachusetts Ave. Indianapolis, Ind.

Johnson Furnace Co., Kansas City, Mo.

E. A. Higgins Co., 1112 Douglas St. Omaha, Nebr.

Moncrief Furnace & Mfg. Co., Dallas, Tex.

E. W. Burbank Seed Co., 29 Free St. Portland, Me.

J. F. Conant, Ry. Term. Warehouse Troy, N. Y.

Wilkes-Barre Hdwe. & Stove Co., 18-20 S. Washington St., Wilkes-Barre, Pa.

Eastern Office: Room 1306, 11 W. 42nd St., New York City E. L. Garner, Manager



The SERIES "C"

MONCRIEF

Say you saw it in AMERICAN ARTISAN-Thank you!

SELL WARM AIR HEATING

SELL NiAGARA'S Plenty of Heat

It's the most satisfactory system money can buy.



AKE your Niagara Warm Air Furnace Book, open it before Mr. and Mrs. Jones, and it will do a large part of your selling job. You need only to help it a little, as-

"Plenty-of-heat! That's the first big thing you're buying. The primitive days of Daniel Boone and other pioneers are gone. You want

a good warm comfortable house even if the mercury dives almost out of sight-and the very smallest expenditure of time for furnace stoking, cleaning, and 'running' generally.

"That's what we assure you with the New Niagara. It's

clean, healthful, low cost heat, too. No other heating method guarantees you all these advantages. These are a few of the reasons why nearly three out of every four American homes with central heating plants have warm air systems-of which the Niagara is the finest example."



Cleveland, Ohio



2500 West 27th Street

To you, Mr. Dealer, the New Niagara is a quick-assembling, trouble-free installation which fulfills every requirement of the Standard Code. It makes money for you because (1) it installs in record time, (2) it delivers many months of service without call-backs. and (3) pleased users keep sending their friends to you for more Niagaras. Mail the coupon for the Niagara Warm Air Furnace Book.

FOREST CITY FOUNDRIES CO. 2500 West 27th St. Cleveland, Ohio

Send your Niagara Warm Air Furnace

HEALTHFUL HEAT

THE FOREST CITY FOUNDRIES COMPANY

WARM AIR FURNACE

Say you saw it in AMERICAN ARTISAN-Thank you!

ALL

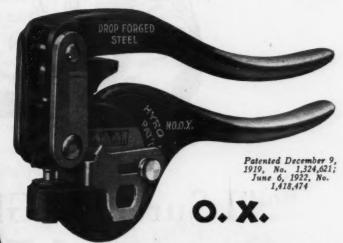
Patented April 24, 1923, No. 1,453,082

SHUR-GRIP

SOLDER IRON HANDLE

HERE'S a real solder iron handle, fit to go on a he-man's solder iron. You don't have to burn or pound it on; you just screw it on, like the cover of a fountain pen. It contains a hardened die that cuts its own thread right into the stem of the solder iron. And just try pulling it off! It can't be done. Yet the SHUR-GRIP will unscrew instantly and may be used over and over again. An opening runs the length of it and conducts the heat away. And, of course, the SHUR-GRIP fits the hand as if grown into it. The SHUR-GRIP is your handle.





METAL PUNCH

MAGINE a powerful punch weighing only 25% lbs. and measuring only 8" overall, that yet will punch 14-gauge metal. Add easy one-hand operation and a patented front-pointer and side-gauge combination that eliminates center-punching. The result is the HYRO O. X. METAL PUNCH, considered indispensable for field and shop work by thousands of sheet metal men. If you haven't one already, get one of these pocket-size steel eaters at once.

Patented April 1922, No. 1,411,80

X. X. METAL PUNCH

0

YOU know the old saying: "If the mountain does not come to Mohammed, then Mohammed must go to the mountain." The HYRO X. X. METAL PUNCH says: "If the work cannot come to the punch, then the punch must go to the work." A single pin releases it from its stand on the bench, and then it can be taken around anywhere. It weighs only 4½ lbs., measures 9" overall, punches ½" holes in 18-gauge metal or the equivalent of that performance, has a throat depth of 3½", and enough clearance between jaws to get over beads and obstructions. Altogether a most useful and handy tool to have about.

HYRO MFG. CO., INC. 202 VARICK STREET NEW YORK, N. Y.

Please send me descriptive folders and quotations on:

(Please check)

- SHUR-GRIP Solder Iron
- □ O. X. Metal Punch□ X. X. Metal Punch

☐ All Products

Name.....

Address.....

City.

State

1-31



"I Sure Am Glad I Tried Kester!"

"I guess I'm kind of an 'old timer,' Tom—and it's not very easy to get me to try something new. Take Kester Solder for instance. I'd heard about it from others and they all said it was great. But I never started using it until last year. I sure wish I'd tried it long ago! I would have been money ahead, that's one thing sure."

Once a man gives Kester Solder a try—he's sold on it and sold *heavy*. And no wonder! It is more economical, easier to work with, and insures the kind of soldering results

that bring in a steady stream of business! Kester carries scientifically prepared fluxes right inside itself. All you do is apply heat, and just the right amount of flux flows to the job.

Why don't you write us and get a free sample of Kester Solder to try out on your work? Let us have some idea of your soldering problems, and mention whether you want acid-core, rosin-core or pastecore solder. There's no obligation.

KESTER SOLDER COMPANY 4241 Wrightwood Avenue, Chicago, Ill. Incorporated 1899







Always on the alert to improve their product, Waterbury engineers have redesigned the Waterbury Seamless Furnace, to give it even greater strength and added serviceability. . . . Now the body and front are formed from a single piece of heavy steel—a feature found in no other furnace. . . . Oxy-acetylene welding of ALL seams makes the Waterbury permanently gas-tight. . . . A real humidifier gives ample moisture to the heated air to insure comfort and health. . . . Fuel efficiency means economical operation. . . . Heavy construction throughout gives years of added life to the Waterbury. . . .

good proposition for dealers

The Waterbury Merchandising Sales Plan, which is a part of the Waterbury Franchise, helps dealers build up a profitable and permanent business. . . . Write for complete information about the Waterbury Franchise and details of the new construction of the Waterbury.

Waterman-Waterbury Co.

Minneapolis, Minn. 1122 Jackson St. N. E.

Complete Stock Carried in

PHILADELPHIA PITTSBURGH

YAKIMA CHICAGO SAN FRANCISCO

EVERYONE TO HIS OWN CHOICE



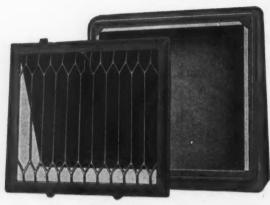
The PANAMA

The real reason for the invention and introduction of the PANAMA LINE of Baseboard and Convex Registers and Baseboard Cold Air Faces.

A bar design of positive beauty that is rich in appearance—that has put the beauty in and the ugliness out of Bar Design Registers.

SO—if you must prefer a Bar-Type Register order samples of the PANAMA LINE before you buy for 1931.

PANAMA Baseboard Registers—two-piece—with removable center. Made purposely for leak-proof connection between register and box.



Center Removed



Center Frame and Head

But-Still in the Ring and Going Stronger Than Ever

The JONES NATIONAL and the NATIONAL

A design of the beautiful pleasing style of the NATIONAL that has weathered the business storms of fifteen long years. Never changed but constantly improved to its present perfection.

Let a beautiful line of registers increase your furnace sales and profits for 1931.

You take no chance in placing a trial order—if any chance is taken we do that for you.

Get Our Last Catalog, No. 21

UNITED STATES REGISTER COMPANY

Battle Creek, Michigan

Branches—Minneapolis, Minn., Kansas City, Mo., Albany, N. Y., Denver, Colo., San Francisco, Calif., Los Angeles, Calif.



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COMMON BUYING OBJECTIONS

and how

SUNBEAM

dealers overcome them ...



RUILDER:

"All Furnaces Look Alike When I am Showing People Through the House. Why Should I Pay More for a Sunbeam?"

Sunbeam Dealer: "You are letting a very few dollars stand between yourself and one of the best selling arguments that you can have. You can use the Sunbeamthe product of the world's largest makers of heating equipmentcorrectly installed, as one of the chief reasons why your house is a better 'buy.' The low prices made possible by volume production The 1000 Series Sunbeam give you a better furnace plus a

better installation at a difference in cost that is not worth considering."

This is only one of the many objections that you must answer every few days. Whatever the others may be, Sunbeam has anticipated them.

The prospect who says he has not the money is answered with the Sunbeam easy payment plan. The home owner who will have nothing but a cast iron furnace-or a steel furnace, as the case may be-can be supplied with the type he prefers. The purchaser who is guided by the responsibility



and prestige of the manufacture is sold by the organization back of Sunbeam. Buyers who carefully compare products before orderings, are convinced by the Sunbeam Miniature Aluminum Furnace.

To establish and maintain a large, profitable retail heating business, you need more than a stock of quality furnaces. You need a time payment plan; produc-

tive equipment for your salesmen; advertising helps to locate prospects; a furnace for every requirement; and reasonable prices! If your present proposition does not include all these advantages, you are losing many profitable sales, that a Sunbeam dealer would obtain. And you should return the coupon below today.



THE FOX FURNACE COMPANY, Elyria, Ohio

A Division of American Radiator & Standard Sanitary Corporation

Send you to Name	r 1931	Dealer	Proposition	and	your	40-Page	Heating	Manual
Address				******				**********
City and	State							A -2

"I Was Losing Money Until I Installed This New Bookkeeping System"

So Writes a Sheet Metal Contractor*



Read His Complete Letter

"Like most sheet metal contractors, I am essentially a mechanic. I know how to hang a gutter; I can design and install a warm air heating system. I can turn out one of the best skylight jobs in the country.

"But when it came to keeping my books, and collecting what money was coming to me—well, I just didn't seem to be able to do it.

"I was usually busy, week in and week out, and when it got to the end of the year. I seldom had any money.

"Then, a few months ago, the secretary of my local Association told me about the cost-finding system that the Trade Associations Service Company had designed for sheet metal contractors. He showed me how easy it was to operate; how it would enable me to keep accurate records of every job; how it would tell me, when the job was completed, whether I made money or not.

"It only takes me a few minutes a day to enter the necessary figures in this simple system, yet I am making money now when I never could before. I think every sheet metal contractor in the United States should have one of these systems. He will more than save the very modest installation cost for himself the first week."

*Name on request.



Send for the Booklet

We have prepared a little booklet that will explain in detail the system of which this man speaks. It is called "A Sure Way for a Sheet Metal Contractor to Make More Money." You may have your copy today by sending in the coupon.

Or better yet, see your local secretary, whether you are a member of the organization or not. He will be glad to explain to you in detail just how much this system can do for you.

Book Department, AMERICAN ARTISAN 139 North Clark Street,

139 North Clark Street, Chicago, Ill.

Gentlemen:

Kindly send your booklet, "A Sure Way for a Sheet Metal Contractor to Make More Money." No obligation, of course.

Name

Address

City.....



Say you saw it in AMERICAN ARTISAN-TW

The Complete List of "AFCO" Furnaces and Heating Units

"AFCO" "T" Style Boiler Plate Furnaces

"AFCO" "R.E." Style Boiler Plate Furnaces

"AFCO" "Crescent" Style Boiler Plate Furnaces

"AFCO" "De Luxe" Healthful Heating Units

"AFCO" "Duo-Blo" Industrial Unit Heaters

"THERMO" Cast Iron Furnaces

"THERMO" Cast Iron Open Dome Furnaces

-All in a variety of sizes-

"AFCO" Dealers

Can Offer a Complete Heating Service Unequalled for Variety or Quality!

The dealer no longer need limit his business to any particular class of business or to any one kind of furnace. "AFCO" offers a complete line of furnaces, and air conditioning units that meet every heating requirement—from the smallest home to the large public, commercial or industrial building.

Profits in 1931 are going to be made by dealers who offer a complete heating service and can take advantage of every opportunity. Will you be one of these dealers?

Don't lose another day—write for complete "AFCO" information—without obligation—now.



AMERICAN FURNACE COMPANY

2719-2731 Morgan () 7:

ST. LOUIS, MISSOURI

Make .

ar with "AFCO"-In Spite of All Pessimism

w it in AMERICAN ARTISAN-Thank you!

Founded 1880

THE WARM AIR HEATING AND SHEET METAL JOURNAL

Published Every Other Monday

Covering All Activities

Gravity Warm Air Heating Forced Warm Air Heating **Sheet Metal Contracting Air Conditioning Industrial Roofing** Merchandising Ventilating

We would like to call your attention to the editorial note at the bottom of page 38. So many requests have been sent asking that we reprint the series on Fan Fundamentals by G. A. Voorhees that we have decided to put these articles in pamphlet form. These pamphlets will be free. All you need do is write us on your letterhead and your request will be filed for a copy. If you want this valuable series in permanent form write while you read this article.

Once again we would like to call your attention to the merchandising section on pages 36 and 37. If you have some "kink" which has proved a money maker for you, let us hear about it. If it worked for you, others would like to try it out. Such co-operation will assist in building up the sales ability of our industries.

YEARLY	SUBSCRIPTION	N PRICE:
United Sta	ates	\$2.00
Canada		\$3.00
Foreign .	• • • • • • • • • • • • • • • • • • •	\$4.00
Single Co	pies	25e

VOL. 100, NO. 2

JANUARY 19, 1931

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FRED D. PORTER, President Editor: Joseph D. Wilder

JOHN C. LANGTRY, Vice-President Associate Editor: Arthur A. Poss

HOWARD H. BEDE, Secretary Business Manager: Etta Cohn Advertising Representatives: Charles E. Kennedy and J. F. Johnson

Circulation Manager: John R. Hannon New York Office: 295 Madison Avenue, Room 1109, Tel. Ashland 5342-L. R. Hudson, Eastern Representative 8

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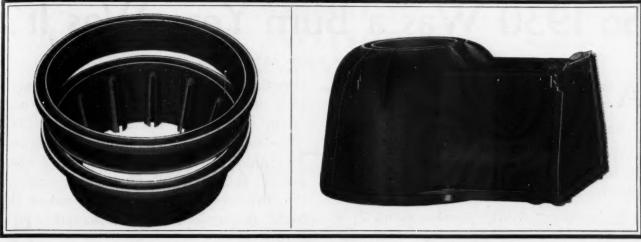
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3 YEARS AND \$24,500.00

-were spent in making these parts of Premier DeLuxe Furnaces just as BURN OUT PROOF as it is possible to build them. And now, as a result, PREMIER DeLUXE FURNACES, INCLUDING THE GRATES, ARE GUARANTEED FOR TEN (10) YEARS NO MATTER WHERE, HOW OR BY WHOM INSTALLED! WHERE IS THERE A MORE COM-PLETE OR BETTER FURNACE GUARANTEE?

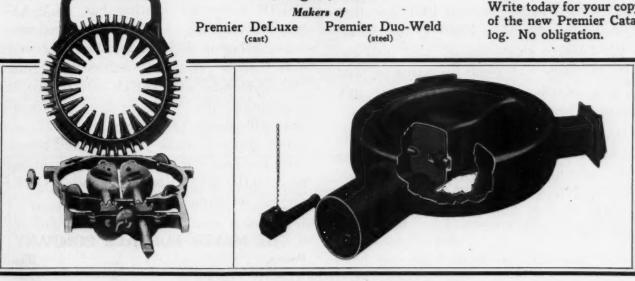
PREMIER

WARM AIR HEATER CO.

Dowagiac, Mich.

FREE CATALOG

Write today for your copy of the new Premier Cata-



Say you saw it in AMERICAN ARTISAN-Thank you!

So 1930 Was a Burn Year, Was It?

A LL right—we'll admit it was—for many people and businesses.

But-and here's a real "but"-

We happen to know of a few cases that go to PROVE that there was business in 1930 for those who really went after it.

F'r instance: A little wood-working shop not 200 miles away and making nothing but "knick-knacks" and novelties—not a single necessity in the entire line—had the biggest year in their history in rotten 1930—going far ahead of even 1929. They sold everything they could make, working day and night shifts, at gratifying profits—and 1931 sure looks good to them.

We know, too, of a manufacturer of leather goods—no necessities, but appealing little luxuries—who gained over 300% over a big 1929 in 1930—and 1931 sure looks good to him!

We know, too, of a washing machine manufacturer who, while others were crying about rotten business in 1930, went ahead into the greatest year the company has ever known and made handsome profits. They believed business could be had—AND THEY GOT IT!

We know a contractor—a man who builds homes into which furnaces must go—who told us on January 4th—a Sunday—that he was asking nothing more of 1931 than that it should be as good as 1930! Feature that!

We know a small retailer who feels exactly the same way about his business—and he sells merchandise and service that only one in a thousand buy!

We know of a furnace dealer, too—who almost DOUBLED his 1929 business in 1930—and he was tickled with 1929 sales! He is marching into 1931 with his head up and his eyes on four little words: "More Sales and Profits."

And last-and far from least-we have

something more than a speaking acquaintance with a furnace manufacturer who "went right ahead sawing wood" in 1930. They didn't do an awful lot of shouting and they didn't spend any time agitating their tear-ducts—and 1930's final report made all the Directors "give themselves a pat on the back" and to face 1931 very happily.

Here's what we are getting at in all of this: While an awful lot of people and businesses were wailing about "conditions" in 1930—a lot of others selling everything from book racks to washing machines WENT AFTER BUSINESS AND GOT IT!

And they made money!—while competitors were so busy with their lamentations that about all they have to show for 1930 is a pocketful of wet handkerchiefs.

Now don't kid yourself. 1931 IS going to be better—but it isn't going to be so much better that everybody will be calling for help to handle their business. It will be better for those who DIG—and every time somebody DIGS a basement excavation SOMEBODY IS GOING TO SELL AND INSTALL A FURNACE.

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Warm Air Heating is rising higher and higher in the public good will all the time. WEIR warm air heating has ALWAYS been outstanding—and it will be even more outstanding in 1931. Something far more than just a furnace is necessary to meet 1931 demands—and WEIR offers you that something. We offer it to you in a manner that will enable YOU to sell it in 1931 at a profit that will make you very well pleased with the year—provided only that you back up GOOD WISHES with good WORKS. Details on request.

THE MEYER FURNACE COMPANY
Peoria, Illinois

Volume 100

American Artisan

THE WARM AIR HEATING AND SHEET METAL JOURNAL Number 2

Lest We Forget Again!

BACK around the time now popularly known as the turn of the century, the sheet metal contractor was a contractor standing high in the graces of the architectural profession.

Then a series of events took place which gradually at first and then with increasing swiftness shoved the sheet metal contractor out of favor and down among those contractors who are necessary—possibly—but just not considered seriously.

In those days, every architect thought a sheet metal cornice or a metal roof, or metal trim was necessary for their pet structures. But competitive interests got under the architect's hide and the sheet metal contractor helped things along by doing sloppier and sloppier work until the competitive interests monopolized the field once held for metal.

Things went along pretty much that way for a couple of decades. Then these interests which had courted favor began to get careless. The architects, also, got tired of using the same old materials over and over again and metal slowly began to be thought of as a means of expressing the architect's ideas in color, form and permanence.

Things were hastened by an expanding and unheard of use of metal abroad. American architects began to hear astonishing stories of foreign buildings built entirely of metal and glass, light in weight, of unusual color and form and marking another definite trend in architecture.

Here and there around the country live architects looked back in musty telephone lists and found the name of a sheet metal contractor who used to have free run of the office. The younger architects hustled out and dug up young sheet metal contractors who were willing to try anything so long as it meant business, but who also knew enough to know that if only they could

get the chance they could duplicate and better any metal work done abroad.

Then these once friendly advisors and now favored consultants sat down with architects and dug deep into revolutionary ideas on the use of the metal in our buildings.

The result of these conferences was an awakening of the sheet metal industry. The mills got interested and brought out new metals, designed and poured from new base metals and promoted among the architects as a new and sure way to build individuality into a structure.

Beginning some five years back the move has spread and gained impetus until today metal is a favored and highly regarded way to finish off a building. We have seen the results of this movement in a great variety of church, school, office, industrial and monumental buildings clad and roofed and now sheathed in metal.

Last year the Chrysler Building astounded all New York and since its opening has been a mecca for architects from all parts of the world. Its glistening metal sheathed tower has caused even blase New Yorkers to stop and gaze at its inspiring pinnacle. Now this magnificant structure has been topped by a higher and in many ways much larger buildings, the Empire State, and even more important the exterior of this newest tower from its base all the way to the top of its 85 stories and mooring mast is composed principally of metal and glass.

It marks the definite acceptance of metal by the architectural profession. We may rightly expect other equally interesting buildings to be brought forth. Architects will plan and what they plan our industry must execute. If we are wise we will this time build soundly and permanently so that during many years to come the sheet metal contractor will once again be a major contractor in the eyes of the architect.

G. A. Voorhees in the February 2nd issue will conclude his series on Fan Fundamentals. So many questions have been asked why fans do such and so in operation that Mr. Voorhees will write a second series—Applied Fan Fundamentals. This series will show how fan principles should be handled on the job.

Empire State— Emphasizes

The Empire State Building has an exterior practically all metal and glass. The metal is Nirosta and Allegheny each on two sides of the building. This building may mark the beginning of major contracting for the sheet metal contractor



FOR the second time within the last few months the architect and sheet metal contractor have co-operated to produce a revolutionary development in the construction field.

In many ways this second development overshadows the first. Just a few months ago we reported the sheet metal exterior of the recently completed Chrysler Building in New York City. Now another and greater building—the Empire State Building—uses metal profusely for exterior construction.

Whereas the Chrysler Building turned to metal for ornamentation and for sheathing the towering spire which completes the building, the Empire State Building uses metal as a really integral part of the building exterior.

Following practically on the heels of the completion of the Chrysler Building, where the first introduction of the ornamental use of metal for the exterior received its greatest incentive in recent years, the rise of the Empire State Building confirms the trend of architectural thought of today, which is centered in the extensive possibilities of ornamental metals.

A combination of steel and cast aluminum in conjunction with the gray limestone piers, dark brown metal windows and brick backing comprise the actual elements entering into the exterior construction of the Empire State Building. In the uniting of metal with stone the design effects obtained promise to set up new standards in the building field for exploitation of ornamental methods.

New York City now possesses two outstanding buildings having metal exteriors. Both of these buildings have attracted world-wide attention because of the fact that they are respectively the tallest buildings in the world.

At present the Chrysler Building has the honor of being the highest building with its total height of 78 stories and 1,046 feet, capped with an ornamental metal-covered dome in Nirosta steel. In May, 1931, upon completion, the Empire State Building will assume the honors attending the world's tallest building, for the Empire Building will be 85 stories in height, 1,248 feet over all, and likewise capped by a bright metal mooring mast in tower shape extending 200 feet in the air.

The heat, wear and corrosion resisting qualities of stainless steel will be fully tested in the lengthy life ahead of the Empire State Building. The height of the structure affords two types of ornamental study. It is commonly known that New York has many air strata, each one of which has a widely different effect on the face of metal exposed to the elements. The top layers of air strata are those of the natural elements, while the base layers have a mixture of dirt, grease and gases thoroughly saturating the square inch capacity. The metals in the lower part of the building, in the store fronts especially, will be subjected to greater strain in surface exposure than the steel erected higher up in the build-

The metal runs in strips serving

World's Tallest Building The Trend to Exterior Metal

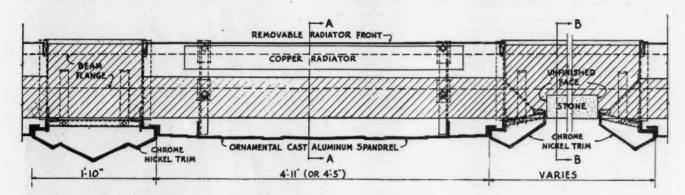
as window trim and mullions nearly the whole height of the 1,248-foot building, affording brilliant contrast with the gray limestone piers and the darker vertical lines of the windows. The vertical lines of polished steel begin at the sixth floor and extend upward the full height, merging at the top into great sunbursts. Dark vertical lines of the windows are kept intact by use of deplated cast aluminum spandrels, the dark gray of which will merge with the window black.

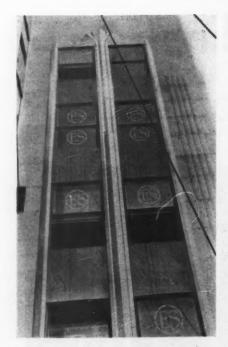
Varied Effects Are Obtained

Window openings are arranged in groups of twos and threes, the groups separated by limestone piers. At the sides of each window group is a trim of the corrosion-resistant steel 10 inches wide, and windows of the same group are separated by mullions of the alloy 22 inches wide. The plane of both these metal sections is broken by vertical angles carefully worked out to give the desired light and shade, the lines of these angles extending vertically the full 85 stories above the fifth floor and broken only by the setbacks. At each setback the metal lines terminate in decorative caps similar to the sunbursts topping the tower, but smaller. The window



Above and below are shown the construction of the metal trim, mullions and the cast spandrels. Excepting for narrow stone piers the exterior wall is all metal. This construction marks a revolutionary departure in architecture and indicates great things ahead for the sheet metal contractor





The metal trim and mullions end at the top of the set-backs in bright metal sunbursts of special design and stamping

heads and smaller sunbursts were designed and stamped by Miller & Doing of Brooklyn.

Each metal unit is reinforced with bright metal strips at intervals of about 2 feet. The facing is fastened to the structural steel of the building at the floor levels with web plates and structural brackets. Additional anchorage is provided between floors by strap anchors set in the brick work and bolted to the reinforcing channel strips. Bolts of 1/2- and 3/4-inch diameters are used in anchoring. The sections fit together with a lap joint occurring at each floor level; thus provision is made for the contraction and expansion of the metal. The lap joint is sealed with a continuous interlocking clip at each joint to make the connection weather-tight. In the actual construction of the building, these fabricated lengths are fitted together much the same as sections of a fishing rod.

All told, some 385 tons of chromenickel steel will be employed on the exterior of the Empire State Building. Of this, between 240 and 250 tons will be required for window trim and mullions, the balance going into ornamental caps, sunbursts and mooring masts. Contract for fabricating the 6,352 pieces of window trim and 2,752 mullions, making a total of 9,104 sections or a total of over 20 miles if laid end to end, was awarded to the United Metal Products Company, Canton, Ohio.

Placing of polished steel strips in position on the building began in June.

Half of the steel is supplied by the Republic Steel Corporation, Massillon, Ohio, and the other half by the Allegheny Steel Company, Brackenridge, Pa.

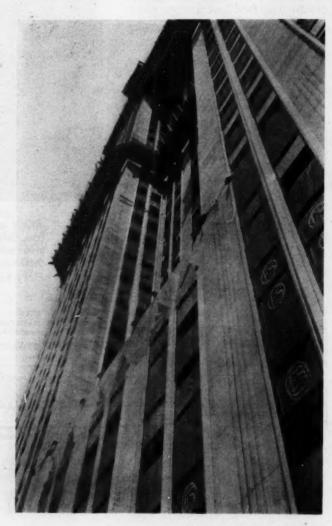
All stock received in the United plant is of final length and width so as to require no trimming, and is polished on one side to a Tampico brush finish, a finish of satin texture to eliminate glare common to the mirror polish.

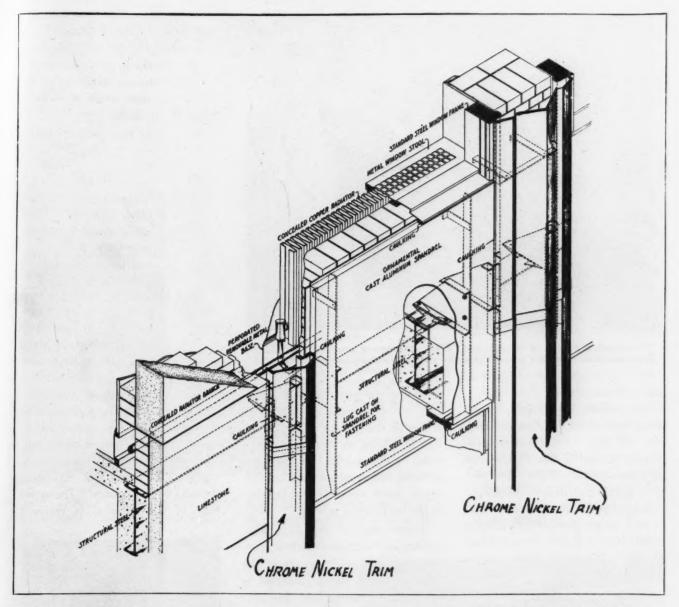
The trim and mullions are made of 18-gage; however, some 16- and 22-gage stock was used for reinforcement purposes. The longest section fabricated is 1519/16 inches; a typical section is 1399/16 inches long.

Because of the great hardness of 18-8 steel, a chrome-nickel die steel which is extremely tough was used in the forming brakes.

Extreme care must be exercised in drawing or forming chromenickel steel, because die marks can be produced easily and these must be removed by polishing, a laborious and costly operation. The United company accomplished this elimination in a simple and effective manner. Linseed oil and lithopone were mixed together to form a compound of some consistency and this was applied to the upper drawing die with a brush. A strip of light wrapping paper was placed between the dies, which on being brought together, caused the paper to adhere to the upper die. When a sheet is placed polished side up between the dies for forming, sufficient linseed oil and lithopone filter through the







This drawing shows how the metal work was put together. The supporting braces for the trim and mullions is shown in dotted lines. The supports for the spandrels are also indicated. The sections were so carefully stamped that erection consisted simply of putting the telescoping seams together. (Drawing by courtesy of Architectural Forum)

paper to serve as a lubricant and to eliminate die marks completely.

An average of 15 die impressions can be made before it is necessary to relubricate the die and replace the paper.

Assembled by Spot Welding

The reinforcing channel strips; anchor strips; interlocking clips or backing strips, and $2 \times 2 \times \frac{1}{4}$ -inch structural steel angles 12 inches long, two at each end of every section, are electric spot welded to the chrome-nickel sections. This spot welding is performed on 25-kilowatt machines at voltages determined by experiments to give the best results.

In some section sections, where the contours of the two ends differ, it was necessary to weld two shorter sections together. A backing strip of 18-8 metal was spotted behind the joint, following which the joint was carefully arc welded. As is always the case in welding chromenickel steel, the arc polarity must be reversed. Here again the proper voltages were fixed by experimentation, but a current of 42 amperes gave best results. For certain limited operations, oxyacetylene torches were used. In all welding, both electric and gas, chrome-nickel welding rods of 18-8 composition, and available from several sources,

were employed.

Smoothing off and polishing the welding joints constitutes an interesting operation. The bead formed in welding was rough ground off with electric portable grinders. The bead or joint was smoother down to the metal section, using mill files secured in holders to bow the blade and to prevent scratching or marring the surface with the file ends. After being filed the joint was polished with a 150-grain buffing wheel. The final polish, however, was obtained with a Tampico fiber brush and a polishing compound consisting of four parts of No. F powdered pumice, one part of se-



This shows a closeup of the sunburst. The connection of sunburst to mullion is by means of a flat lock seam. The entire sunburst was assembled in the plant

lected lime.

To remove any finger prints, grease picked up from the forming dies, or other foreign matter, each section is washed thoroughly with gasoline and rubbed dry. The sections are then immersed in a 25 per cent nitric acid solution steam heated to a temperature of 120-125 degrees Fahr. Each chrome-nickel section is submerged in one or the other of the tanks for 20 minutes.

CONCEALED
RABIATOR BRANCHES
PHISHED FLOOR
STRUCTURAL
STREEL
CAULKING
CAST ON
SPANDARL FOR
FASTEMING
CAULKING
CAULKING

SECTION 'A-A'

A cross section of a spandrel and its support. The caulking is indicated During the period of immersion any ferrous particles or slivers embedded in the surface of the section during rolling or filing down the welds, are removed. Unless these particles are removed, rust or corrosion spots are likely to develop in the steel during service.

At the end of the 20-minute pickling, the section was lifted from the acid, still suspended from the pipe and hooks, and is immersed in cold water to cut the acid. Remaining in the water only momentarily, it is placed on one of two tables adjacent to and draining into the rinse tanks and washed with hot water and a rag. Next the section is dried by wiping and is dusted with whiting and rubbed briskly to remove all traces of moisture. At this point another and final dusting of whiting is applied to protect the surface of the metal during ship-

Sections Are Identical

The general contractors for the Empire State Building are Starrett Bros. & Eken, New York, but two subcontractors, C. E. Halbeck & Co. and William H. Jackson Company, both of Brooklyn, N. Y., are engaged in erecting the metal, each being assigned two adjacent sides.

One contractor erects the steel manufactured by the Republic Steel Corporation and the other that made by the Allegheny Steel Company. For this reason all steel supplies by these two companies must be kept separate during fabrication. Each unit of the metal has its particular place in the building and each carton is marked on the outside to indicate the place and the name of the contractor, so that the sections can be kept completely covered and protected until they are put in place.

The Spandrels

The aluminum spandrels are generally 4 feet, 6 inches high and 5 feet wide, in one piece, and weigh only 130 pounds. The spandrels have a wall thickness of ¼ inch. In the building 5,704 spandrels are used.

The exterior face of the spandrel is sand-blasted and deplated to produce a dull gray surface corresponding in tone value with the windows above and below, but contrasting with the metal trim adjoining the sides of the spandrel. The upper edge of the spandrel is received



At some levels the trim has two contours which form a projecting lip. This joint was welded and filed in the shop and does not constitute a job joint



Right — Depressions and bellies in the trim and mullions were leveled up vertically by moving back or forward the steel bracket which supports these units at each floor level

Left—The face of the spandrel is a dull grey to match the color of the long lines of windows. Two typical joints are also shown at close range. These seams were all assembled in the shop and were simply slipped together on the job

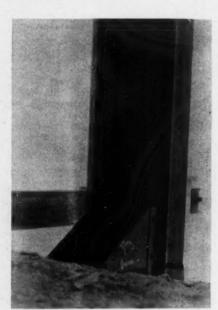


from the outside, the mechanics working from a hanging scaffold.

By means of integral rims cast on the back of the spandrel and a uniform type of steel bracket and strap, the spandrel is rigidly supported from the steel frame of the building and can be placed in position independently of the other elements of the assemblage, should this be desirable.

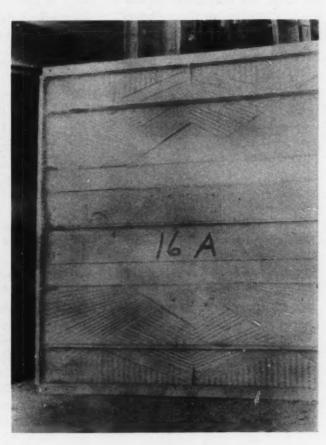
under the sill of the window; the lower edge is set over the window-frame head. The sides of the spandrel are received behind the exterior metal trim. At all of these points provision is made for a stop against which to receive the calking—the space between the spandrel and the window sill being calked from the rear, while at win-

dow heads and sides, and at sides of spandrels, calking will be done



Right — The back side of a spandrel. The cast aluminum is braced by integral rims and cross angles. In spite of size these spandrels can be, placed by two men and moved around by one man

Left — A closeup view of the structural steel brace which permits moving the sheet metal sections outward or inward. The bolt holes are slotted





F the Standard Code has done nothing else, it has enabled warm air heating contractors to visualize the changes which should be made in old installations which are not heating satisfactorily.

Applying the rules of the Standard Code, any contractor can outline to a home owner those changes which modern science has proved

definitely increase the comfort gotten out of the heating plant and in most cases lowers the cost of fuel. In all replacement or revamp work such a schedule is of the greatest value in selling the job. And because it is of such value it should always be used.

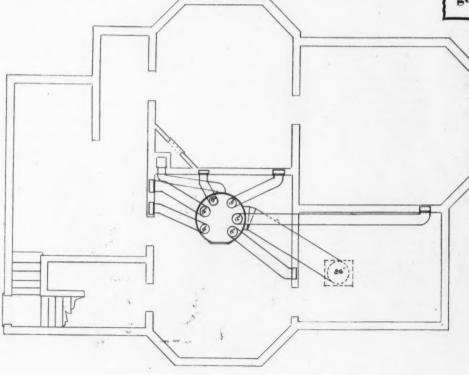
This selling appeal of the Standard Code has long been used by

There are thousands of warm air furnaces which have been heating houses for 15, 20, 25, 30 and more years.

Thousands of them are just satisfactory enough that owners don't feel the need for remodeling.

A good sales plan is to get the owner to help you and together check his job against the Standard Code. Then many desirable changes will show up. Having helped you figure out the job, the owner will be receptive to argument why he should make the changes.

In this day of competition we have to make use of every means to get profitable work.



Here is the 25-yearold installation. Six warm air leads and one sketchy cold air return make the system. According to our Standard Code this is an excellent prospect for a good remodeling sales talk. So it proved in this case

Against Standard Code— d Plenty of Remodeling Prospects"

the Charles Johnson Hardware Company, Weir Furnace dealers in Sheffield, Illinois. This progressive heating firm does not have a very broad field in new construction. Most of their work comes from replacement and revamp selling. So to make their appeal as strong as possible they use every legitimate means to show how a modern sys-

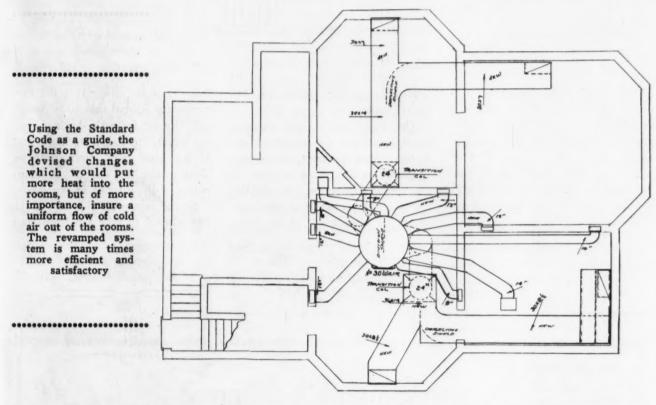
ways work. The trouble was not in the furnace (for the old one, after 25 years of service, was used in the revamped plant) but was in the means followed to get warm air into and cooled air out of the rooms upstairs.

Let's look for a minute at the layout for the original plant.

So far as locating the furnace

his baseboard registers. If memory serves correctly, the Foster register was the first baseboard register ever used, and Foster was also the first man to advocate using the combination first floor register and second floor stack.

In the original installation these combination first floor registers and stacks were used. In revamping the



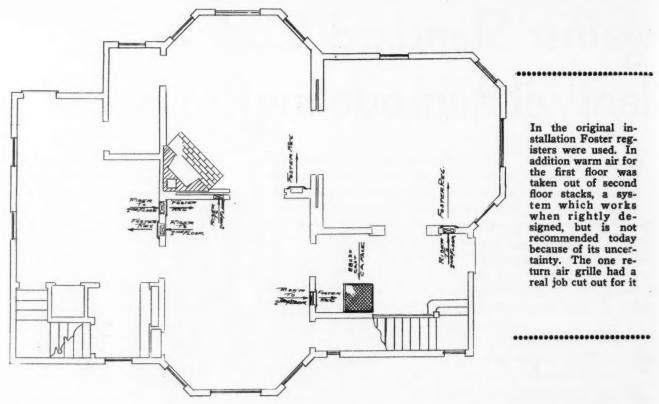
tem is superior to the design of 20 and 25 years ago.

The plans with this article show a typical example of this redesign work of the Johnson company. The original installation was made by a local heating man in 1906. That was several years before Standard Code work was followed and also many years before engineered systems were thought necessary.

The heating plant was simple in the extreme. As a matter of fact, it was so simple that it didn't alwas concerned, the original layout was correct. However, the return air and warm air supply was totally inadequate for the job to be done. Perhaps 25 years ago coal was so cheap that the owner could afford to run his plant wide open on cold days. But today, with coal more expensive, economy of operation must be considered.

It is interesting to note that throughout the house Foster registers were used. Probably the oldtimers will remember Foster and system all these units were taken out and more modern registers were substituted. In some instances, however, the old stacks were left in place.

It is probable that one of the basic reasons for insufficient heat in the old job was the fact that not enough warm air was brought into the rooms. In addition, a better distribution of heat was gained by placing some new registers in locations where the Standard Code indicates heat ought to be introduced.



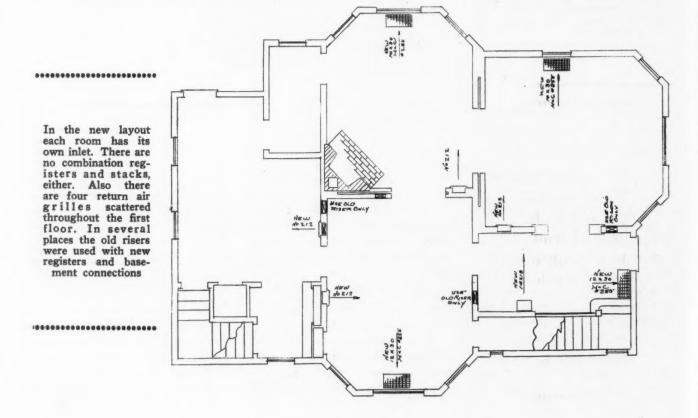
The original installation had six warm air leaders and one cold air return. In the new system there are nine leaders and four return air leads. There was a total of 558 square inches of warm air in the old system as against a total of 847 square inches in the new system. The return air is also increased

from 531 square inches to 904 square inches.

The most pronounced changes recommended by the contractor are in the basement heater and piping. A glance at the return air side of the system illustrates this. In the old system there was just one large return air coming out of the front

hall. It is not likely that the first contractor figured this outlet would pull any air from the back side of the house, but today we know that if we want good circulation we should take air out of as many points of the interior as possible.

So the return air side of the job was altered to take air from four



points. The first is from the front hall, but closer to the front door and at the bottom of the stairs. This new duct has an area of 255 square inches. This return air duct is carried over to the outside wall so as to be as much out of the way as possible. The duct goes along the basement wall to a point directly opposite the furnace.

Here this duct joins with a second which brings air from the central room through another rectangular duct, also of 255 square inches. This second duct brings air from the central portion of the house. The two ducts are joined just ahead of a transition fitting which takes the air through a 24-inch round pipe into the casing boot.

One of the interesting features of the return air system is the use of deflectors throughout the ducts wherever two moving bodies of cold air come together. The junction of these two ducts is provided with a combination arc and straight deflector which keeps the two columns of air separated until just over the transition.

A similar two-duct system is used on the opposite side of the house. The ducts are 1½ inches shallower, but of the same width, 30 inches. At the junction of the two ducts another deflector is used.

b

In the old installation the one

cold air pipe was cut directly into the casing. In addition there were no shoes of any kind at the casing and no transition fitting at the junction of the round pipe and the floor register. In the new plan properly designed shoes and fittings were used at all necessary points. Another feature is the use of a divider shield within the casing separating the two incoming streams of cold air within the casing. The contractor used this shield to eliminate any turbulence which might counteract the smooth flow of air from the shoes into the casing. The shoes are also on opposite sides of the

The changes made in the warm air side of the system are not as radical as those of the cold side. The main difference is the 50 per cent increase in the number of leads and the use of smaller leaders.

One very evident change is the conversion of the old hall floor cold air grille into a floor warm air register. A smaller size grille was used, but the hole in the floor was utilized to supply heat, since it was not needed for cold air.

In the revamped layout one leader supplies each first floor register and each second floor riser. The combination unit was discarded. Whereas several of the smaller rooms in the old design were left to get heat from adjoining rooms, each room has its own supply in the new plan. This is according to Standard Code and good heating practice.

Certainly one of the interesting features of this job is the fact that the old furnace, which had been in constant use for 25 years, was used again in the altered system. When it is considered that some of the rooms did not heat as desired and that an ordinary person would naturally, then, force the furnace during cold spells, one of the basic reasons why warm air heating has survived every obstacle became apparent.

The Charles Johnson company is a firm believer in the Standard Code. It is their basic guide for new and remodeled installations and their base for figuring. They claim that any contractor who takes the Standard Code along when he visits jobs, or when he is doing cleaning work, or visiting basements, and checks the old layout against the Standard Code, will find, in a surprising number of cases, real, sound reasons for remodeling the old heating plant.

The use of the Code also gves the home owner the idea that here is a heating man who knows his business and does his figuring in a scientific manner. That always goes well with the prospect.

Simplified Engineering

We are still getting requests for more specific information on points raised in the articles by Platte Overton. These questions indicate that a large percentage of readers are looking to this type of heating for profitable business.

As a result of this interest, we have prevailed on Mr. Overton to write a series of articles taking up in full detail every item you should understand if you want to enter this field. The articles will be written just as simply as possible, but they will be, in fact, a course in simplified heating and ventilating engineering.

They will begin with the February 2 issue.

Plan Your 1931 Advertising Crease the number of sales, thereby reducing the net cost per sale. If

E VERYONE nowadays believes in advertising. But believing in it and undertstanding how to use it as a selling force for your business is another matter.

Most dealers intend to advertise but delay until a more suitable opportunity, and what little advertising is done is usually done in a haphazard manner. Such effort is almost invariably wasted. Advertising (selling effort), to be really effective, must be planned in advance as part of your selling plan.

"We don't spend much money for advertising," a great many dealers will say. "Our business doesn't justify it."

It makes no difference how much or how little you spend. Unless you plan your advertising you cannot hope for it to achieve its purpose, nor should you ever consider your advertising apart from selling. It is selling and as such is a necessary adjunct of your sales force, delivering the same message that you would deliver in person, but reaching a larger audience than you can hope to reach by personal calls.

How Much to Invest

How much should I spend? is the first question most dealers will ask.

This is difficult to answer definitely without previous experience as a guide, but your advertising should be budgeted in some fixed ratio to your sales. How much can you set aside for advertising for each furnace you expect to sell next year? Not how much can you add to the expense of selling each furnace, but how much can you appropriate per furnace in the hope of selling a greater number without increasing your fixed sales overhead or productive labor cost in any way? Here you have a real criterion for the establishment of an annual advertising budget. Necessarily this percentage* must be determined on the basis of your own cost of doing business and the estimated opportunities in your community, which you alone can measure. Advertising devoted to other departments of your business can be similarly budgeted.

You would not hesitate to give ten dollars for every prospect for a sure sale turned over to you. The purpose of your advertising budget is to fix such a ratio and, by the consistent use of advertising, to in-

*In many lines of business, 5 per

cent of annual gross sales is considered a conservative sum to be used for

reducing the net cost per sale. If your advertising adds expense, obviously it is not to be considered as a wise investment.

If you fixed a ratio of \$10 per furnace (this figure is named only

for purpose of illustration) on the basis of 50 furnaces sold last year, you could invest \$500 in advertising to guarantee the sale of at least that many this year. If, then, on the basis of constructive and consistent advertising during the year you are able to increase your sales to, say, 65 furnaces, your net advertising cost would be reduced to less than \$8 per furnace. Your profit on the 15 additional furnaces sold might conceivably pay the entire expense of your year's advertising, thus augmenting your net profit by the reduction of overhead and sales cost per furnace sold.

This is, of course, not the limit of what can be expected of your advertising, nor is there any certainty of it accomplishing that much. It depends entirely upon how your advertising is planned and how your plans are executed, just as the employment of a salesman doesn't guarantee increased revenue. It depends upon what he says, how he says it, and, as important as anything, upon how he plans and organizes his work.

This brings us down to the mechanics of your advertising campaign. Having decided how much you are going to invest, how, when and where are you going to use it?

Where and How to Advertise

If you are located in a town of moderate size the daily or weekly

HEATS

NOTER

SUMMITER

Johnmidtin Forced Air Jyrems

Toledos Pioneers in Madern Air Conditioning

The Constant circulation

Clean Maderome Remisdited Pediations

Air in constant circulation

Clean Architect

advertising.

This well located outdoor advertising display does more than "keep Schmidlin Brothers" name before the public." It presents a constructive selling story about conditioned warm air ereby

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newspaper is probably your best means of reaching the greatest number of prospects for the merchandise and service you have to offer -at the lowest cost per prospect reached. This applies to the larger cities as well, but the cost of space might be out of reach of your limited budget, and much of the newspaper's circulation may be in portions of the city you cannot hope to serve, thus multiplying unreasonably your cost per prospect reached. If the newspaper's circulation coincides approximately with your logical sales territory, it is your best bet.

Newspaper Advertising Preferred

Consistent use of space is a prime essential regardless of the size and scope of your business. Whether your advertisements appear once a week or oftener, or at less frequent intervals, their regular appearance is vital. While it may be advantageous to concentrate your furnace advertising expenditures during the period of the year when the demand is greatest, the effectiveness of such seasonal advertising is greatly enhanced by the consistent advertising you have been doing.

Advantages of Direct Mail

If for the reason suggested, newspaper space is not available to you, there are other means of reaching the market you need to reach. You can mail letters and circulars at regular intervals to separate classes of prospects which you have listed in accordance with their known interests and needs. In fact, direct mail advertising possesses advantages of specific appeal not possessed by newspaper advertising, which is more general in its appeal. By mail you can address your old customers with one type of appeal-for repairs, replacements and the sale of heating accessories - while home owners using other types of heating can be appealed to in another way. Architects and builders would receive sales messages with an entirely different sales argument, just as you would talk differently to these various classes in person.

WERE YOUR COAL BILLS TOO HIGH LAST WINTER

You would be s money you can w efficient heating sy

You would be surprised at the amount of money you can waste in an under-sized, in-efficient heating system in one winter. And generally a heating system that wastes fuel does not give sufficient heat when extremely cold weather comes around.

We know the causes of excessive fuel consumption. And we know how to remedy them. Ordinarily the cost of modernizing your system is paid for in a few years by savings in fuel. Frequently, we are able to show home owners why a new, modern Sunbeam Warm-Air Heating System is not an expensive luxury but a downright economy. When you consider that a new Sunbeam will always give you all the heat you want—clean heat, healthful heat—with very little attention and will burn less coal, you should ask us for a cost estimate. There is no obligation and time payment terms can be arranged. Let us talk it over with you today.



MOHR-JONES

RACINE'S LEADING HARDWARE STORE PHONE JACKSON 192

This advertisement (actual size) occupied two newspaper columns. While it is evidently a syndicated advertisement furnished by the furnace manufacturer, the furnace itself is subordinated in the copy

Direct mail advertising in all its phases is a special subject for study in itself, but if the dealer will concentrate his attention on building a good mailing list of prospects and will confine his advertising efforts to sales letters, with enclosures of folders supplied by manufacturers, he can accomplish much.

A Consistent Selling Story

Here, as in the case of newspaper advertising, the value of the adver-

tising cannot be measured by the direct traceable returns. Its chief value is in the continuous hammering away at a consistent selling story which plants itself into the minds of your carefully selected and graded prospects. Such letters should be mailed consistently to each list, more frequently, perhaps, during the most active season, but at regular intervals throughout the year, too.

Standard Layout and Copy Suggestions for Series of Four Single Column Newspaper Advertisements

What About the Air You Breathe?

MUCH attention is being given now-adays to diet and hygiene—what to eat, how to live, how to extend the span of life by careful living.

Yet little thought is given, apparently, to the problem of the air we breathe, particularly in our homes. Much can be added to the enjoyment of your home this winter and the danger of colds to a large extent can be eliminated with an even distribution of warm, moist air.

If you have a warm air heating plant it can be converted to a modern air conditioning system with a minimum of expense. In any event, you owe it to yourself to investigate the health advantages of a well designed warm air heating and air conditioning system.

If you are considering changes in present heating system or if you have doubts about the air in your home, one of our representatives will be glad to discuss this subject with you, without cost or obligation.

Why Pay for What You Don't Get?

YOUR NAME

1952, YARDSHOP AVE.

PHONE- - - NO

CO ...

WHEN you buy a heating plant that is too small for the actual requirements of your house or with inadequate piping to some of the rooms, you pay for the larger and properly installed plant many times during the life of the plant. You pay for it in coal bills—a measurable dollars and cents loss to you—not to mention the extra trips to the basement for fueling and ash re-moval and the loss of heating comfort and health for your family.

We shall be glad to recommend the kind of heating plant your home re-quires; the kind that will heat it healthfully, efficiently and economically. Remember you are paying for this kind of a plant when you buy the other kind and the small added cost of a properly installed plant may be repaid to you in a single heating season.

Be sure that your heating plant is installed by an engineer who carefully calculates your heating requirements according to the *Standard Code*. One of our engineers will be glad to tell you what you need.

When You Install a Furnace-

HEN you install a warm air heating plant, you are assured of efficient heating service only by a dealer who installs according to the Standard Code approved by the National Warm Air Heating Association and the American Society of Heating and Ventilating Engineers and incorporated in the building codes of all progressive cities. A dealer who operates under this code will not undertake to recommend a heating plant for your home or to give you even a tentative price until after he has measured the size of every room, window and door and has carefully calculated the actual heat loss for every exposure. Unless this is done by a qualified heating engineer he cannot hope to assure you of the results you are entitled to expect from a properly installed plant of proper size.

We shall be glad to calculate the heating requirements of your home and recommend the kind of heating plant it needs, regardless of whether or not you may be considering a new heating plant now. This will not obligate you in any way.

You Install an Oil Burner

WHEN you get ready to install an oil burner in your warm air furnace be sure that the heating plant is fully as efficient as it should be.

The oil burner you buy cannot possibly perform as economically and efficiently as it should unless your furnace is of prepar canacity. Do not take the

is of proper capacity. Do not take the oil burner man's word for it unless he has measured the heat loss of your house according to the Standard Code.

We shall be glad to do this for you without cost or obligation and will recommend such changes as may be needed to bring your heating plant up to the required capacity, thus assuring the most economical operation of any

oil burner you may buy.

Inexpensive alterations or repairs may be repaid to you in the fuel cost saved in a single season.

On this page is a rough layout and suggested copy for four 8-inch single-column newspaper advertisements. Any suitable illustration can be substituted for the one suggested, or the illustration can be eliminated, in which case you depend upon the head line, the white space around it, and the rule for attracting attention. The four copy suggestions are intended to tell a selling story about heating service. If these advertisements fit YOUR selling story, you will make no mistake in calling in the local newspaper man and starting off a schedule with these advertisements.

Additional copy suggestions will appear in subsequent issues of AMERICAN ARTISAN

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It might be well to mention that one of the chief aims of advertising is to overcome the concentration of business during certain months and to encourage purchases during the so-called off seasons. Advertising can help a great deal in this direction by pointing out reasons for making changes and additions to the heating plant during the summer months.

How Big Must My Ads Be?

We are now ready to consider the physical characteristics of the advertisements. First of all they must attract favorable attention in order to get themselves read but you can get help along this line from the local newspaper advertising department. You can also imitate a style of advertising layout employed by advertisers in other fields which might appeal to you. When a style has been determined it should be maintained consistently so as to preserve the continuity of your advertising messages enabling the casual reader to recognize them as yours. Each advertisement prepares the reader for the next one he chances to see.

The larger the ad the greater are its possibilities of attracting attention. That does not mean, however, that you cannot attract favorable attention with small space. The suggested advertisements which accompany this article are for the most part for single column newspaper space. It is better to use small space at frequent and regular intervals than large space at less frequent intervals. If your appropriation permits the use of large space during the most active season, so much the better, but do not splurge on the big space at the expense of the continuous run of smaller space.

With a five column ad of the same proportion as the page, you can dominate the page on which it appears. Even a four column ad will compete favorably for attention with any smaller ads on the page. Skillful use of type, borders and illustrative material will, how-

ever, assure attention value even for single column advertisements.

What to Say in the Ads

What the individual advertisements say, depends upon what they are designed to accomplish. Merely "keeping your name before the public" may be worth while but you should make your advertising accomplish much more. The mission of your advertisements is to sell and they won't do much of a job

Now is the time to think about your 1931. advertising. But don't only think about it; do something about it.

Call in your newspaper representative, talk to a local advertising man, get the help of the manufacturers whose products you sell. If the suggested advertisements on the opposite page appeal to you, use them.

Better still, plan your own advertisements and get your own selling story into them, but by all means get something started and then keep at it.

merely by telling the public that you are engaged in the furnace business, handling the Blank furnace which is a very superior product and that you do excellent work.

What is your chief selling job? What ideas are you trying to put across that your prospects seem to be not ready to receive? That should be the chief objective of your advertising.

It should be borne in mind that people are usually not interested in furnaces and, if at all, only incidentally. To sell them face to face on a better type of heating service—home comfort, healthfully conditioned air, humidity, air motion, uniform temperature, fuel economy—you don't talk about the mechan-

ical features of your furnace. Only afterwards, perhaps when the prospect has been sold on your ability to deliver the other essentials.

Co-ordinate Advertising and Selling

Then why not do the same thing in your advertising? If you mention the furnace on which you specialize, subordinate it in the advertisement to catch the man who is "in the market" for that type of furnace. This is usually advisable, as it is an effective means of tying in your advertising with the favorable reputation being established by your furnace installations. The furnace, however, should not dominate the advertisement.

Accompanying this article are suggested advertisements which might be part of a series. They are not presented as the correct way to do it. There are thousands of variations of effective appeals which might be made, and no man's selling story is exactly like another's. These advertisements are presented merely to illustrate a type of advertisement which seeks to sell heating sevice, rather than furnaces at a price. Such advertising is designed to create prospects for warm air furnace heating as well as to bring in existing prospects.

The suggested series also illustrates how continuity of selling appeal can be preserved. Each individual ad tells a complete story, yet the continuous series tells a connected story.

In order that dealers may use these suggested advertisements with a minimum of trouble or expense, the art work has been kept as simple as possible. Simple illustrations which your printer or newspaper may have on file can be substituted for the ones shown. Your manufacturer friends, too, can doubtless help you in supplying illustrative material.

These sample advertisements are presented to help you get started. As the campaign gets into swing other ideas will occur to you, and other suggestions will appear in these columns from time to time.

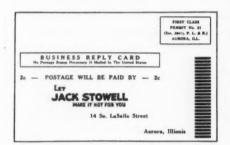
Make It Easy for Prospects to Locate You

NE of the most important requirements of any sales effort designed to get the prospect to use your service consists in making it just as easy as possible for that prospect to get in touch with you.

Clipping coupons attached to a letter is one of the most common practices, but another method which has proved a high return plan is to enclose with the letter or broadside a business reply post card.

One advantage of this card is that the prospect does not have to cut out anything or look up the address. All that is required is to fill out the card and drop it in the mail box.

Shown here are the front and



back side of a return card which Jack Stowell of Aurora is using this year. The front of the card carries all the necessary mailing information for the postoffice.

The back side of the card has a

space for the customer's name, address, telephone and location of the plant to be cleaned. The telephone at the furnace is also on the card,

•	AM	INTERESTED IN HAVING MY FURNACE CLEANED PLEASE CALL AND TELL ME ABOUT IT
		YOU MAY CALL:
		Date
		Heur.
-	M repa ignée mo	firs are moded give recommendations and estimate of cost. It is understood this does not in any way,
	ame_	
N		Address

so that the tenant can be called just before the inspecting salesman or cleaning crew gets on the job. This is important in the case of a tenant.

Up above this are two lines where the owner can indicate the date and the hour of the day if desired when it will be best for the salesman to call. This courtesy has proved of much value.

Jack also uses a salesman card which looks like the illustration. The card has a string attached so that it can be filled out and attached to the door knob, mail box, or any part of the entrance. The purpose of this card is to let prospect know that a salesman called and did not find the owner at home.

Space is also provided to explain why the salesman called, and this space should be filled in carefully. Unless it indicates a call to tell the How
Do You Do!

CALLED

DATE

HOUR

AS A REPRESENTATIVE OF

LET

JACK STOWELL

NAKE IT HOT FOR YOU

TO

FURNACES
FURNACE FANS
FURNACE REGULATORS
SHEET METAL WORK

Phone 2-2964 - Aurora - 14 S. La Salle

prospect something of value, the owner may be scared off and not use the card.

It is not expected that every home owner called on will immediately dash to the phone and call Jack up and invite him out for dinner or to listen to Amos and Andy. It is a reminder, however, that Jack Stowell is a live heating man and is prepared to tell the home owner something which will save him money, give him more convenience, or make winter heating more of a pleasure.

Let Uncle Sam Check Your Mailing List

A LMOST every warm air furnace dealer who uses a mailing list for advertising purposes finds that each time he mails some pieces come back from the postoffice, undeliverable.

Did you know you can check over your list with a governmental postal clerk?

Well, you can. The government allows a postoffice to indicate wrong addresses, to check off names to which mail cannot be delivered, but it is not permitted to add new names.

A stated charge of 65 cents an hour is fixed for such assistance to the advertiser. It is cheaper to pay for this service than to buy and stamp mail that goes in with the "nixies" and comes back to the sender.

Furthermore, when there are some pieces of mail that have imperfect addresses, but can be delivered and are, they lose some of their good effect as the recipients note that you don't know their names or addresses. The result is somewhat the same, in less degree, as it is when you miscall their names in speaking to them.

Checking the mailing list will prevent duplication. The postoffice can check out such duplications for you and save you money.

Christmas Cards Build Good Will

WHAT did you do in Christmas cards this year?

If you didn't send out some cards to your best prospects, or even more important, to your old customers, you missed one of the best bets of the year.

Folks are in a genial mood at Christmas or at least they are supposed to be, but at any rate everybody likes to get cards from persons they didn't expect would remember them.

This card was mailed out by a Philadelphia contractor to 500 customers and prospects. The card cost him just $5\frac{1}{2}$ cents each including the making of the drawing, the cost of the card, the envelope and the stamp.

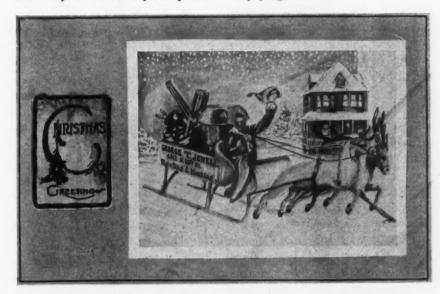
That's a cheap enough reminder that you are in business and thinking of the person you mail to, isn't it? We might add that the contractor who mailed these cards runs a small shop and two years ago was so far in the red that he was all set to become a delicatessen owner.

Then he began to advertise in a small way. He used only low priced

cards, mailing pieces and letters.

But he mailed consistently!

Now his service is known and liked and he is out of the red and well on his way to lay aside a nice stake for old age. His advertising is paying dividends.



Show Windows Should Sell One Idea

A GOOD window display should be designed to tell one idea to passers-by. Failure to follow this one-idea plan is the principal reason why so many windows present a conglomeration of products and arrangement and, because

of their very messy appearance, do not attract attention.

The window shown here has one main purpose.

That purpose is to prove to prospects that Warnkey Brothers sells lots of furnaces and that some of their jobs are in the prospect's neighborhood.

This idea is "put across" by means of the large city map on which is spotted Warnkey installations. Anyone stopping to see what the map is all about can't help but be impressed by the number of furnaces and their wide distribution.

The main display is backed up with large-lettered cards which state that any Warnkey customer is a booster and is willing to show and tell about the merits of his heating plant. Another card invites the passer-by to step in and examine a furnace.

This window has proved a very definite sales help. It can be used by any contractor having enough window space to show a map.

Warnkey Brothers are located in West Bend, Wisconsin, and handle Premier furnaces.



FAN FUNDAMENTALS [Part IX]

With Particular Reference to the Use of Fans in Heating

THE article in the January 5 issue listed five sources of fan noise and discussed the first, which had to do with sound produced by air vibration due to high velocity and turbulence in the air stream.

The second source of fan noise, namely, air vibration caused by fan blade impact against the body of moving air, depends to a great extent on the shape and width of the individual blades, the number of blades, and the rotative speed of the fan.

For a given velocity of air leaving the blade, the impact of the blade against the air is greater with the average propeller type furnace fan than in the case of a centrifugal fan of reasonably good design.

The theory of blade design involves quite intricate mathematical computations, and when the theoretically correct blade is designed and built, practical tests may show the need of various alterations.

To one not in close contact with the building of furnace fans, it is a revelation to see the number of blades that have been developed and built by the more progressive furnace fan manufacturers, only to be discarded as unsatisfactory after thorough and extended tests have revealed unsuspected defects.

The entire problem is one of manufacture. The careful heating contractor protects himself by By G. A. VOORHEES

Heating and Ventilating Engineer, Indianapolis, Ind.

avoiding the use of fans which are obviously of faulty design or poorly built. He will also discontinue the use of types which his own experience has shown to be troublesome.

Generally speaking, the narrower the blade of a propeller fan, the faster it must run to deliver the required volume of air against a given resistance.

Thus the airplane propeller type, while it may be efficient as a ventilating fan under free delivery conditions, sometimes makes trouble when applied to a furnace fan.

Because of its narrow blades and the relatively large openings between blades, as explained in Part V (August 30th issue), such a fan has to run at high speed if it is delivering air against any appreciable resistance, and high speed in a furnace fan usually means noise. The true airplane propeller type, with a relatively thick blade of "streamline" cross-section, is quieter than a stamped sheet metal blade of the same width and length, but, even so, there is liable to be complaint of noise.

Investigations of airplanes, having in view the elimination of objectionable noises, have shown that much of the sound which was pre-

viously supposed to come from the motor exhaust, really originates in the propeller. It it probable that when quieter operating propellers of this type are developed, it will come from the airplane industry. Progressive furnace fan manufacturers who are interested in this design are watching developments closely.

In the smaller sizes, 12-inch to 15-inch diameters, these airplane propeller fans with correctly proportioned blades give excellent service as boosters, but the advisability of applying them as pressure fans, especially in the larger sizes and where quiet operation is desirable, is open to question.

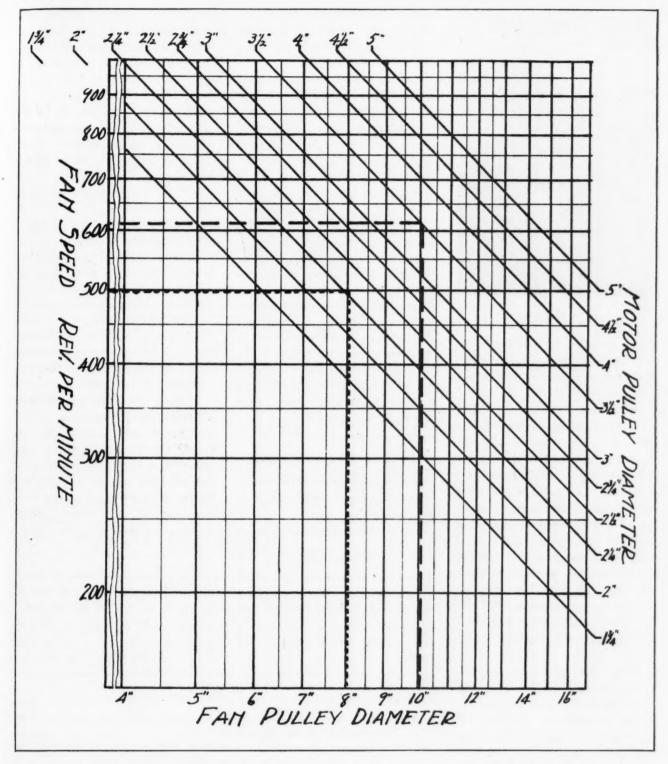
On account of the wide variation in the intensity of sound produced by different shaped blades of the same general dimensions and operating at the same speeds, it is impractical to set any definite limit on rotative speed.

Some 12-inch fans can be operated quietly at 1750 revolutions per minute (r.p.m.), but for larger propeller diameters a lower speed is always desirable and usually necessary if noise is to be avoided. The average 24-inch propeller fan will not be sufficiently quiet at speeds beyond four or five hundred revolutions per minute. The intermediate sizes between 12-inch and 24-inch will run at speeds ranging downward from 1750 r.p.m. to 500 to 600 r.p.m., and alternating cur-

This series on Fan Fundamentals will come to a close in the February 2 issue. We plan to reprint the entire series with the illustrations used in the form of a small booklet.

If you would like a copy send your request on your letterhead addressed to the Editor, AMERICAN ARTISAN.

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rent motors operating at these speeds are usually expensive and for some speeds quite impractical. On account of the added cost of such motors and considerable doubt in the minds of many conservative furnace men as to their lasting qualities, the use of standard speed motors with belt drive has recently become popular.

Thus, by proper relation of fan and motor pulley sizes, the exact

speed wanted can be obtained for the fan. This has opened up the furnace fan market to manufacturers of centrifugal fans, which have been used for years in the larger ventilating systems and mechanical hot blast heating jobs.

These so-called "blower" fans have distinct advantages over the usual propeller type in large installations where the air ducts are of small cross-section with correspondingly high air velocities, also in plants equipped with efficient air filters, which often develop considerable resistance.

But the average warm air plant in a residence, or similar building of moderate size, will not develop a static pressure (frictional resistance) sufficient to justify the use of a centrifugal fan merely because of resistance.

Even in many of the larger



G. A. Voorhees

plants, propeller type fans are giving highly efficient service where the plant is installed with ample free area in the ducts.

The Butler University Field House at Indianapolis is an example. Here four propeller type furnace fans, each 10 feet in diameter, are handling a total of 360,000 cubic feet of air per minute in what is said to be the world's largest warm air furnace installation. These propeller fans are of the belt drive type. With standard speed motors the fan speed is cut down to about 140 r.p.m. The air velocity through the fans is approximately 1150 feet per minute and the plant is satisfactorily quiet for a building of this type.

With either centrifugal or propeller fans having belt drive, the speed of the fan is very easily adjusted to meet any ordinary requirement as to quietness of operation and volume of air delivered. With either type it is advisable to choose a fan of ample capacity and run it at low speed. In this case, the mechanical efficiency of a centrifugal fan may be reduced a little, but the advantages more than offset a slight loss of efficiency.

In those public buildings where quiet fan operation is equally as desirable as in residences, a higher air velocity through the fan is often possible because the heating plant is

so located in the building that a reasonable amount of fan sound can be absorbed before it reaches the occupied portions of the building.

The safest policy for any heating contractor who has had limited experience in such work is to seek thoroughly competent engineering advice. Otherwise he had better use large fans operating at quite low velocities to avoid noise.

The speed (r.p.m.) of any belt driven fan is found by multiplying the motor speed (r.p.m.) by the diameter of the motor pulley in inches, and dividing the product by the diameter in inches of the fan pulley.

give, without figuring, the interrelations of motor and fan pulley diameters and fan speeds in revolutions per minute. It is constructed only for the most common motor speed, 1750 revolutions per minute.

Example: A fan having an 8inch pulley is to run at a speed of 500 revolutions per minute: what size motor pulley should be used? From the fan speed of 500 r.p.m. at left of chart, project horizontally to the right as shown by dotted line. From 8-inch pulley diameter at bottom of chart, project vertically upward. The intersection of these two lines is at the diagonal line representing 21/4-inch motor

(Motorr.p.m.)×(Diam.motorpulley) Fan r.p.m. =

(Diam. fan pulley, inches)

Example: If a 1725 r.p.m. motor having a 3-inch pulley is belted to a fan having an 8-inch pulley, what will be the fan speed?

$$\frac{1725 \times 3}{8} = 647 \text{ r.p.m., fan speed}$$

The above equation can also be expressed:

pulley diameter, which is the size required.

Example: If a fan has a 10-inch pulley and its driving motor a 31/2inch pulley, what will be the fan speed? From the 10-inch fan pulley diameter at bottom of chart, project vertically upward to the intersection with the diagonal line representing 31/2-inch motor pulley,

(Motorr.p.m.) × (Diam. motor pulley)

Diam. fan pulley = (Fan r.p.m.)

Example: If a motor operating ley, what size fan pulley must be

at 1140 r.p.m. has a 21/2-inch pulused to give a fan speed of 400 r.p.m.?

then horizontally to the scale of fan speeds at the left of the chart (as shown by the dash line), and it is seen that the fan speed is approximately 615 revolutions per minute.

Diam. fan pulley =
$$\frac{1140 \times 2.5}{400}$$
 = 7 inches, approximately.

The equation can also be written:

(Diam. fan pulley) × (Fan r.p.m.)

Diam. motor pulley =

(Motor r.p.m.)

Example: If a fan equipped with a 12-inch pulley is to operate at a speed of 800 r.p.m. when belted to a 1750 r.p.m. motor, what size motor pulley must be used?

The accompanying chart will

In both of these examples it is assumed that the motor runs at the common speed of approximately 1750 revolutions per minute. For other motor speeds, such as 1140 r.p.m., the chart does not apply.

12 × 800

=5.5 inches, approximately. Diam. motor pullev =

Pattern for a Copper Kettle

For Jay Sass, Milwaukee

By O. W. KOTHE

JAY SASS of Milwaukee has written us asking for some information on a pattern problem published some months ago. This pattern has to do with a copper kettle. Mr. Sass says: "I have lost a part of the pattern worked out originally. This makes it difficult to understand and I should like to have the pattern reproduced. I understand most of the method, but I am not clear as to how points such as f, e, d, c, b, and a in the quarter pattern of the stretchout were determined."

or

f

1

For any other readers interested in this problem we are showing the drawing and giving Professor Kothe's answer. Here is what Mr. Kothe says:

"The basis of this method is that in a pattern for a spherical shape, the top edges have less curvature than the bottom. You can try this with an orange peeling by cutting it in quarters and straightening it out. I think you can see this better by making the pattern in eighths, since then you do not need to stretch the metal so much, and the seam allows for the take-up, which otherwise must be hammered out, and that is a whole lot.

"This difference in the sweep is arranged by adding 1/10 of the diameter of the top to the major radius for pattern. Thus the top shell is 100 inches, the radius in pattern is 110 inches. This is measured as 1-a in pattern. The curved girth 1-2-3-4-5-6-7, from elevation is set off as 1-7, and the space 7-a is again subdivided in the 6 equal parts, which should give points b-c-d-e-f.

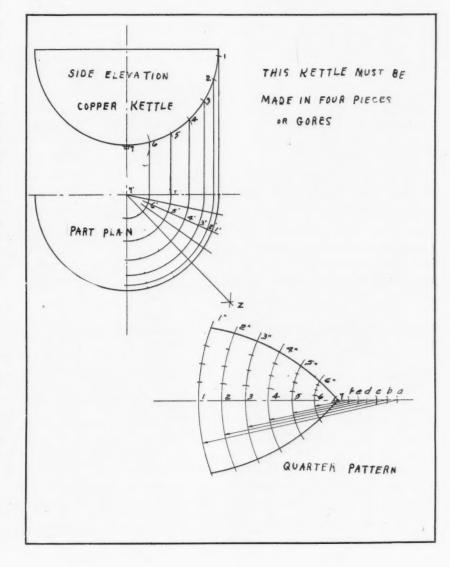
"By using each of these points as a center, as center a, for arc 1, and center b, for arc 2, center c for arc

Many of you fellows are making money in specialties. How do you work up such business and what kind of patterns do you use?

3, etc., that change in sweep is achieved to more closely approximate the flaring of the metal as it bends from the bottom to the top edge.

"I may say, this method is one developed by experimental research in connection with boiler or tank heads when made in this way. The method appealed to me as something more accurate, and simple to apply than many of the rules men have discovered, and so I adopted it.

"Of course, in the hammering, or bumping, much can be done to help the pattern shape up into an almost perfect shape, or with ignorance on the working of metal, it is an easy matter to make horse collars."



Building to Lead Prosperity Drive in 1931!

EVERY indication points to the fact that the building industry in 1931 will probably lead the way toward business recovery. At this time of a national crisis the country is turning to the construction field for its primary alleviation of unemployment conditions and for a contribution to industrial and commercial activity which should prove of material aid in stabilizing the economic structure.

This industry reaches into every community in the United States, large and small, and far out into the rural districts. It includes all or part of the activities of possibly 25,000 manufacturers, 10,000 architects and their 30,000 employees, perhaps 25,000 to 30,000 general contractors and 70,000 sub-contractors of various types. It brings in engineers of all kinds; fabricators, sales agents and 20,000 building material dealers.

In sum total the number of active operating units involved by the building industry is greater than

By C. STANLEY TAYLOR

Director of Research, the Architectural Forum

may be found in any other American industry.

For the year 1931 there are several unusual factors which are highly encouraging for the building industry and consequently for the country. These include the following:

- 1. All indications point to a building program arising through normal channels at least equal in volume to that of 1930.
- 2. Greatly decreased building costs.
- 3. Added to the above volume there is to be an important new source of work for the building industry. This is the publicly financed building program sponsored deliberately by the Federal Government and by various states, counties and municipalities to meet the present economic needs of the country.
- 4. The survey of mortgage conditions indicates steady improve-

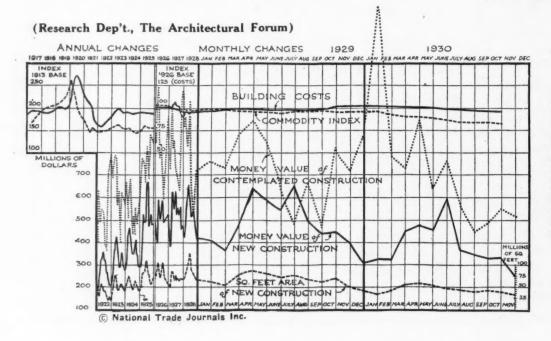
ment which will tend to encourage building activity.

- 5. There is a growing demand for better construction and toward the elimination of "jerry building." This movement is being sponsored seriously by the controlling financial interests.
- 6. There is a growing demand for new structures in the institutional and residential fields.

Tenth Annual Forecast of the Architectural Forum

The above represent the conclusions drawn from the tenth annual building survey and forecast of the Architectural Forum, professional journal for the architects of this country.

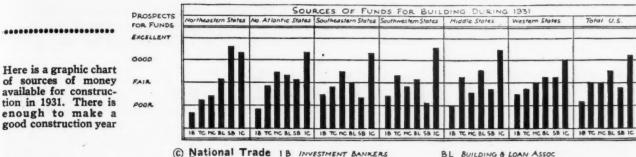
At best any forecast is but an educated guess. In order to develop information from as many sources as possible, a carefully developed questionnaire was sent by the Forum to every architectural office in the country, asking for detailed information covering types and values of buildings under planning or consideration for the year 1931.



Here is a graphic view of building activity by years from 1922 to 1928 and by months for 1929 and 1930. The bottom area shows amount of new construction, the second area shows money spent for new building, the third the value of contemplated projects, the fourth building costs, and the fifth general commodity costs

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- National Trade Journals Inc.
 - 18 INVESTMENT BANKERS TC TRUST COMPANIES MC MORTGAGE COMPANIES
- SB SAVINGS BANKS
- INSURANCE COMPANIES

Similarily questionnaires were sent to a large number of mortgage sources in every part of the country to uncover money conditions in relation to building finance. Investigators visited the government departments, particularly those which might be the source of new construction programs for 1931, and a series of personal interviews was conducted with contractors, engineers and others qualified to render valuable opinions.

chart which provides a graphic review of building construction in the United States since 1922. The elements indicated in this chart include the volume of new building construction in square feet floor area; the value of new construction represented by money invested; and the money value of contemplated construction, being the value of plans filed. There are also given the building cost index and the general commodity index.

today are almost startling. We have heard recently of two large industrial buildings projected in Chicago and just refigured as compared to one year ago. These figures show a decreased total cost of approximately 18 per cent in one year! We have seen the figures on high priced residential work (houses costing from \$80,000 upward) decrease from 11 per cent to 14 per cent in one year's time. Some of the larger contractors of the country state that specific office building jobs show cost decreases of from 13 per cent to 16 per cent. Architects and contractors are all aware of figures indicating that residential construction in general is down at least 10 per cent since the end of 1929.

the comparative figures one hears

It is quite obvious that this is the time to build and that owners can enjoy unusual savings by going into the market within the next few months. It would seem apparent that this condition will help to bring building activity for new plans or bring into action plans which have been lying dormant in various stages of development.

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© National Trade Journals Inc.

This map indicates the opinion on 1931 conditions as expressed by those taking part in the survey

The deductions and figures which are presented herewith constitute, therefore, a broad composite picture made up of thousands of opinions and correlated with the utmost care.

Comparative Building Activity for Several Years

For those who wish to compare building activity for several years back there is presented herewith a

This chart is arranged to show the annual activity from the year 1922 to 1928 and monthly activity during the years 1929 and 1930.

Decreased Building Costs

Of utmost significance is connection with the encouragement of new planning arising through normal sources is the fact of greatly decreased building costs. Some of

Publicly Financed Building to Swell Total

Toward the end of 1930 official announcements began to appear to the effect that several hundred millions of dollars would be appropriated for new building expenditures in the year 1931. Similarly many states, counties and cities have been formulating local programs. In the referendum votes of last election over a half billion dollars was appropriated for state construction activities of which at least

\$300,000,000 is to be expended for new building. A large part of this money has already been specifically appropriated and announcements will soon be forthcoming as to the actual types of buildings and locations where such developments will take place. In all it is quite probable that well over a billion dollars will be put into action in the year 1931 through these publicly financed programs.

The Mortgage Money Situation

In regard to second mortgage

money, it was found that little help was indicated for the speculative builder who, as a rule, requires a large amount of secondary financing in order to carry on. The conclusions which were drawn from this mortgage money survey are as follows:

- 1. There is considerably more money available now for building purposes than there was a year ago.
- 2. There is an obvious preference shown for loans on dwellings due to a desire to diversify security

and the fact that much of the available mortgage money is in the hands of sources favoring this type of loan

3. A reasonable assurance of a fair amount of funds for sound commercial projects in those localities which are not now suffering from an over-built condition.

4. That there are reasonably good prospects that mortgage money conditions will continue to improve in a sound though gradual manner.

A Simple Dust Collector

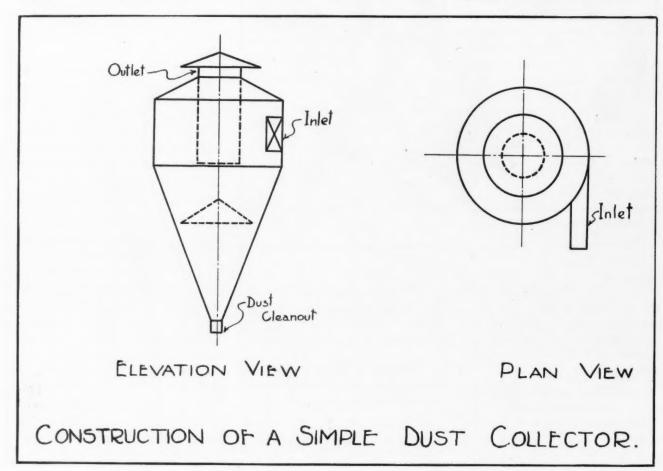
For J. E. Neucomb, Dixon, III.

THIS week's problem was a request for the inside of a dust collector to be used on a shoe repair machine.

There is no explanation necessary with this sketch, as the drawBy W. R. HAINES
Contributing Editor

ing shows for itself the detail of the simple interior construction, and can be made in accordance with measurements given by subscriber.

A suction blower can be used between shoe repair machine and dust collector, or on the outside of collector, as space permits. The collector can be outside or inside.



Put a Selling Punch in Your Window Displays

OST warm air heating and sheet metal contractors have given at least some thought to their window displays, but thinking about them and doing something about them are two entirely different things; and at this time of the year, when dealers are doing all sorts of thinking and planning about their businesses, is an opportune time to put into action some of their thoughts about their window displays.

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> In an article in the December 20th, 1930, issue of AMERICAN ARTISAN we tried to show by actual examples how these principles can be applied in your own window displays. In planning your windows it is of course of greatest importance always to consider how to put a selling punch in the display. Pleasing arrangement and attrac-

tive surroundings will arouse the interest of the casual passer-by, but there must be something more to hold his interest for a second look and to bring him inside to satisfy fully his curiosity.

In the furnace window of the Badger Roofing and Sheet Metal Co., Racine, Wisconsin, shown on this page, a placard calls attention to a unique feature in the design of the furnace and explains its value. By this simple expedient, what would otherwise be merely an interesting and attractive display is transformed into one with a real sales mission.

It is interesting to note that in the exceptional sheet metal and roofing window of the same dealer in which a miniature lake and countryside are reproduced in fine detail, this selling suggestion is lacking. This window is the object of much attention and admiration and has stimulated a lot of business for the landscape gardener who supplied the small concrete towers and whose sign is placed on one of them. According to Frank Bleidorn, president and manager of the Badger Roofing and Sheet Metal Co., it is planned to add to this attractive setting the needed selling suggestion for the owners of it by placing miniature roadside signs which will convey selling ideas for the sheet metal and roofing departments of the business.

With these selling ideas added this pair of windows should provide an ideal selling combination. In addition to being well located with reference to the number of home owners who pass it, the shop front presents a favorable impression and each window is so pleasingly arranged as to attract the attention of those who pass them.

The windows are quite small





AN YOU TELL ME

"National" Air Moistener

From Mr. Burt, c/o Holland Furnace Company, Chicago.

Who makes the "National" air moistener?

Ans.—Robinson Furnace Company, 213 West Austin Avenue, Chicago.

"Faultless" Cast Iron Smoke Pipe

From Jos. Tumpach Cornice Works, Chicago.

Who makes "Faultless" cast iron smoke pipe?

Ans.—Faultless Castings Company, Greencastle, Indiana.

"Favorite" Underfeed Furnace No. 731

From D. G. Sammons, Muncie, Indiana.

Kindly inform me who makes the "Favorite" Underfeed Furnace, No. 731, as I want repairs for it. It is marked Peck Williamson Company.

Ans.—Williamson Heater Company, Cincinnati, Ohio.

"Heat Hustler" Fan

From Carr Supply Company, 414 North Dearborn St., Chicago.

Who manufactures the fan that forces air through a single warm air pipe?

Ans.—This is the "Heat Hustler" which is manufactured by American Foundry and Furnace Company, Bloomington, Illinois.

Sharpening Tinners' Snips

From B. P. Friebel, Manchester, Iowa.
Please give me the name of a firm that sharpens and reconditions tinners' snips.

Ans.—Chicago Grinding & Machine Co., Inc., 2117 Tilden Street, Chicago.

Anemometer Described on Page 40, Jan. 5 Issue

From Sydney A. Bonnaffon, Greensboro, North Carolina.

Who makes the anemometer described in your article on page 40 of the January 5th issue of American Artisan?

Ans.—Keuffel and Esser Company, Adams and Third Streets, Hoboken, New Jersey.

Repairs for "Bertchold" Washing Machine

From A. L. Rodin, Chicago.

Where can I get a cylinder cover for a "Berthold" washing machine?

Ans.—Bertchold Washing Machine Company, 4756 West Washington Boulevard, Chicago.

Domestic Stokers

From L. R. Taylor, Niagara Falls, New York.

Who makes domestic stokers?

Ans.-List mailed.

Anemometer

From E. Gissinger, Wauwatosa, Wisconsin.

Who makes anemometers?

Ans.—E. Vernon Hill Company, 121 North Clark Street, Chicago, and Keuffel and Esser Company, Adams and Third, Hoboken, New Jersey.

Metal Boat Patterns

From W. Manthey, Chicago.

Where can I get metal boat pat-

Ans.—H. F. Thompson Boat and Pattern Works, Decorah, Iowa.

Electric Time Clock

From Leo A. Tilford, Jackson, Michigan.

Who makes an electric time clock for turning electric lights on and off?

Ans.—Reliance Time Switch Company, 605 West Washington Boulevard, Chicago.

Second Hand Power Roll

From L. F. Wilfong, Joliet, Illinois.

Where can I buy a second-hand power roll to roll 8-gauge boiler plate or lighter?

Ans.—Interstate Machinery Company, 601 West Monroe Street, Chicago.

Gas Furnaces—Gas Conversion Burners

From Reynolds Manufacturing Company, Inc., Springfield, Missouri.

We should like the names and addresses of firms making gas warm air furnaces. Also tell us who makes conversion gas burners.

Ans.—A full list of manufacturers is being mailed.

Standard Improved Chuck

From Hyder Furnace Company, Tacoma, Washington.

Who makes No. 0 Standard Improved chuck for electric drills?

Ans. — Standard Tool Company, Cleveland, Ohio. Chicago office: 552 West Washington Street.

"Gilchrist" Ice Cream Dishers

From T. A. Warren, New Albin, Iowa.
Can you tell me who makes "Gilchrist" ice cream dishers, as I need some new springs for them?

Ans.—The Gilchrist Company, New-ark, New Jersey.

Membership in National W. A. H. A.

From Hanenkratt Plumbing & Heating Company, Paulding, Ohio.

I am interested in joining the National Warm Air Heating Association. Where can I get all information on it?

Ans.—From the Managing Director, Allen W. Williams, 3440 A. I. U. Building, Columbus, Ohio.

"Universal" Gas Ranges

From "Forshaw" of St. Louis.

Who makes "Universal" gas ranges?

Ans.—Cribben and Sexton Company, 680 North Sacramento, Chicago.

"Aero" Line Ventilators

From Boseman Sheet Metal Works, Bozeman, Montana.

Please tell us who makes the "Aero"-Line Ventilators?

Ans.—Paul R. Jordan Company, 631 South Delaware Street, Indianapolis, Indiana.

Furnace Brushes

From G. O. Crouch & Son, Chattanooga, Tennessee.

Who makes steel brushes for cleaning radiators on warm air furnaces?

Ans.—Milwaukee Brush Company, 770 30th Street, and Schaefer Brush Company, 1009 South Second Street, both of Milwaukee, Wisconsin.

Stokers

From Moncrief Heating Company, South Bend, Indiana.

Please give us the names and addresses of some stoker manufacturers.

Ans.—A full list of manufacturers is being mailed.



Indiana Association Announces State Program

The Indiana State Convention is set for January 20, 21 and 22, Tuesday, Wednesday and Thursday, at the Catholic Community Center Hall, Jefferson and Barr streets, Fort Wayne. There will be the usual attractive exhibit in which the largest developments in sheet metal material and equipment and of warm air heating devices will be displayed.

The Fort Wayne committee in charge of local arrangements has planned an innovation this year in the shape of two open-to-the-public nights. These nights will be Tuesday, January 20, and Wednesday, January 21. The banquet will take up the evening of Thursday, January 22.

At these open-to-the-public nights the people of Fort Wayne will be invited. Entertainment in the form of music, dancing and special features will be furnished.

F. C. Park, who will talk on "Cost Accounting," is a former controller for Montgomery Ward & Co., and is a man of national reputation along accounting lines. This will be the first opportunity the Indiana trade will have had to hear him.

W. C. Markle, secretary of the National Sheet Metal Contractors' Association and editor of the National Sheet Metal Contractor, will be on hand with something of interest.

Robt. S. Schmieder of Milwaukee will talk on "Promotion of More and Better Sheet Metal Work." Mr. Schmieder has collected a great deal of interesting data particularly referring to the substituting of sheet metal for other building materials.

Edwin A. Scott, owner of the Sheet Metal Worker, New York; Hon. Arthur Lemneck, congressman-eleect of Columbus, Ohio; J. D. Wilder, editor of the American Artisan, Chicago; Guy A. Voorhees, heating engineer of Indianapolis; E. C. Carter, editor of Furnaces & Sheet Metal, Chicago, and Edwin S. Woodward of the Aluminum Company of America, Indianapolis, have arranged to appear on the program, each with a subject on which he is particularly well informed.

Ohio Announces Date of Annual Meeting

J. M. Saunders, secretary of the Ohio Sheet Metal Contractors Association, announces that the Ohio convention will be held February 17, 18 and 19, in the Deshler Hotel at Columbus, Ohio.

There has been some doubt over the Ohio dates, but final decision has been made and these dates will stand.

Wisconsin Announces Program for Annual Meeting

Paul L. Biersach, Secretary of the Wisconsin Sheet Metal Contractor's Association, announces that the program for the 1931 meeting is now completed. This program has been given much thought and the officers of the association feel that they have arranged a schedule which should be interesting for every member.

Following are some of the highlights of the program.

F. C. Park of Pittsburgh will give an illustrated talk on, "Your Business Records." C. F. Waring of Oshkosh will discuss, "My Overhead as Applied to My Business." Bennett Chappel of Armco will talk on, "Let's Talk it Over."

Platte Overton will discuss the subject, "The Design of Sheet Metal Ducts in Connection with Air Conditioning."

In addition to these major addresses there will be a variety of other subject matter such as moving pictures, round table discussions, and short talks by members.

Indiana Contractors Publish Roster

The Sheet Metal and Warm Air Heating Contractors' Association of Indiana, Inc., have published a roster and business directory in convenient card form, the cards being bound together with a brass rivet in one corner. In addition to the names and addresses of the complete membership of 149, eight pages are devoted to a classified list of manufacturers and wholesale distributors of heating and sheet metal equipment and materials.



Sheet Metal and Warm Air Heating Contractors' Association of Indiana—January 20, 21, 22, 1931, at Ft. Wayne, Indiana. Paul R. Jordan, Executive Secretary, 631 South Delaware Street, Indianapolis, Indiana.

Executive Secretary, 631 South Sware Street, Indianapolis, Indiana.
Sheet Metal Contractors' Association of Wisconsin — February 2-3, 1931, at Milwaukee, Wisconsin. Paul L. Biersach, Secretary, 853 Grant Boulevard, Milwaukee, Wisconsin.
Ohio Sheet Metal Contractors' Association

Ohio Sheet Metal Contractors' Association—February 17, 18 and 19, at Columbus, Ohio. J. M. Saunders, Secretary, 215 Plymouth Building, Cleveland, Ohio.

Sheet Metal Contractors' Association of Pennsylvania—March 9, 10, 11, 1931, at Hendler Hotel, Johnstown, Pennsylvania. M. F. Liebermann, Secretary, 1411 Merchant Street, Ambridge, Pennsylvania.

rennsylvania. M. F. Liebermann, Secretary, 1411 Merchant Street, Ambridge, Pennsylvania.

Sheet Metal Contractors' Association of Florida—March 30-31, 1931, at Miami, Florida. G. H. Leavitt, Secretary-Treasurer, 909 Main Street, Tampa, Florida.

Joint Convention Sheet Metal Contractors' Association of Illinois and National Association Sheet Metal Contractors—May 12-15, 1931, at Chicago, Illinois. A. B. Rysdon, Secretary, Associated Sheet Metal Employers of Chicago, 350 North Clark Street, Chicago, Illinois.

January 26-29, 1931—American Society of Heating and Ventilating Engineers 37th Annual Meeting, Pittsburgh, Pa.

WINDOW DISPLAY

(Continued from page 45)

back into the office where additional selling suggestions are not lacking. The furnace window is arranged so as to permit an unobstructed view of the well arranged office which tends to beckon the casual looker inside

There is no means of gauging the effectiveness of windows of this kind as selling effort is cumulative.

Regardless of how extensive or how limited your advertising and selling effort may be, your window can provide the needed buying urge.

NEW ITEMS and NEWS ITEMS From and about the Manufacturers and Jobbers

Midland Furnace Co. Buys Success Heater Co.

The Success Heater Manufacturing Company of Des Moines, manufacturers of steel boiler plate furnaces for the past sixteen years, has been merged and consolidated with the Midland Furnace Co. of Columbus, Ohio, makers of a similar line of heaters. Hereafter the consolidated business of the two companies will be conducted under the name of the Midland Furnace Co. of Columbus and Des Moines under the management of William Gunton, who has been sales manager for the Success Heater Mfg. Co.

Mr. Gunton has been elected vicepresident and director of the Midland Furnace Co. and will remain in Des Moines.

The manufacturing will be consolidated in the Midland Furnace Company's plant at Columbus, Ohio, near the steel mills which supply its materials, as costs can be reduced by increased volume in the one plant.

The Success Heater Manufacturing Company will continue their corporation until their former business can be liquidated. They have retained their real estate and receivables and have disposed of their patterns, machinery, merchandise, sales connections, patents and good will.

Success steel furnaces for warm air heating will continue to be manufactured and the consolidated company will continue the Success retail furnace department for the sale and servicing of Success in Des Moines.

Its western branch in Des Moines will distribute to all points west of the Mississippi River and to all points in Illinois and Wisconsin. Territorial salesmen for this territory will be managed from the Des Moines branch and all sales of both Midland and Success furnaces in this territory will be managed from the western branch in Des Moines. The consolidated company will manufacture both the Midland and Success steel furnaces and the combined volume of sales allocated to its branch in Des Moines will equal the total sales heretofore enjoyed by the Success Heater Manufacturing Company alone, although the latter company's sales in the eastern states will henceforth be managed from the Columbus, Ohio, plant of the Midland Furnace Company.

Newport Rolling Mills Appoint St. Louis Manager

E. R. Walker has recently been appointed district sales manager in charge of the St. Louis territory for The Newport Rolling Mill Company and The Andrews Steel Company.



Mr. Walker is well acquainted in this territory and his many friends will be glad to know of his recent advancement. He will represent both companies on their entire line of iron and steel products.

Columbus Heating Co. Acquired by Surface Combustion

Acquisition of the gas equipment division of the Columbus Heating & Ventilating Company, manufacturers of warm air furnaces, with factories located at Columbus, Ohio, by Surface Combustion Company, has been announced by Henry L. Doherty & Company.

Niagara Opens Branch Office in Detroit

The Niagara Machine and Tool Works, of Buffalo, N. Y., manufacturers of sheet metal working machinery, have just opened a branch office in Detroit.

The office will be in rooms 3-217 General Motors Building.

Russell J. Caplin, who has been as-

sociated with the company for 16 years, will have charge of the Detroit headquarters.

Watt Mfg. Co. Announces Korectaire Booster Fan

The Watt Manufacturing Co., Sterling, Ill., announce the introduction of the Korectaire Booster Fan, illustrated below, in addition to the Korectaire



conditioning unit, which combines a heavy duty fan, air washer and humidifier in one compact and self-contained unit.

Heat Hustler to Be Advertised in Saturday Evening Post

In the Saturday Evening Post, issue of January 15th, the American Heat Hustler was advertised for the first time to the consumer. The Heat Hustler is made by the American Foundry & Furnace Co., of Blooming-



ton, Ill., and is a fan to force warm air through a single warm air pipe to rooms that will not heat satisfactorily by gravity.

This advertisement will reach some 3,000,000 homes.

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Bryant Publishes Handbook on Gas-Fired Warm Air Heater

The Bryant Heater & Mfg. Company, 17825 St. Clair Avenue, Cleveland, Ohio, have just published a new Warm Air Furnace Handbook (A. I. A. File No. 3021) illustrating and describing their complete line of gas-fired warm air furnaces, including both gravity and forced air systems.

This new publication called "Handbook on Heating Buildings with Bryant Gas Furnaces," Form No. SE-316-C, contains a complete description of the various Bryant Gas Warm Air Furnaces, and explains in detail the best methods of figuring warm-air heating installations and the application of this equipment to various sizes of installations.

Milcor Makes a New Metal Lath

The expansion machines of the Milcor Steel Company are now transforming sheet metal into a new, small mesh ribbed lath which, it is believed, will win the acclaim of architects, builders and building supply dealers because it embodies the salient features of metal lath manufacture which are said to make it the ideal plaster base.

It is called Kuehn's Specialmesh and was designed for the purpose of securing adequate plaster key through a small mesh and at the same time providing sufficient metal surface not only for proper reinforcement, but for reduction in the amount of mortar used. There are 20, 520 strands in one sheet of Kuehn's Specialmesh, which is 24 inches wide and 96 inches long. Tests show this size

The Milcor Steel Company has prepared a handsome four-color folder showing interiors and exteriors plastered on Kuehn's Specialmesh, and giving interesting data on this lath. It will be sent to anyone writing the company.

Payne Furnace & Supply Co. Making Factory Overhead Unit

Painstaking tests and experiments conducted for a number of years past have resulted in the development of the Payne Overhead Unit—designed especially for wide open areas of floor space where extreme flexibility of control is combined with a wide range of utility. The Overhead unit is peculiarly suited for factories, lofts, auditoriums, workshops, airplane hangars and the like—wherever part or all of the floor space is to be heated.

Dealers and distributors interested should write to the Payne Furnace & Supply Co., Inc., Beverly Hills, California, for descriptive literature.

Premier Introduces Improved and Beautified Duo-Weld Steel Furnace

Inspired with the success of beauty in gas stoves, bathroom fixtures, radios and scores of other products used in the home, the Premier Warm Air Heater Company, Dowagiac, Michigan, has designed a new and improved 1931 Model Premier Duo-WELD Armor Plate Heater which is advanced as "America's Most Beautiful Furnace."

According to officers of the Company, the innovation of beauty in the design of the new Premier Duo-WELD has met with the warmest approval of Premier dealers and customers everywhere.

The New Premier Duo-WELD is of symmetrical and well balanced proportions, while any "boiler room" appearance has been avoided by the use of long vertical flutes, attractively blending



the entire front into a modern and unified whole. The casing shown is the New Premier "Easy-Up" square casing for which advantages of rigidity, easy erection and absolute dust-tightness are claimed.

In addition to its new and beautiful front, the new furnace also incorporates many advances in mechanical design. As inferred by its name, it is double welded electrically which, according to the Premier Company, results in joints that are stronger than the solid plate itself. A roller bearing duplex grate will be standard equipment on the new furnace, also an entirely automatic direct draft damper, a hot formed drum head, cast steel radiator collars welded on and reinforced with a cast iron inner liner, a larger radiator using cast iron vertical dividing plates, a radiation shield as standard equipment, a larger water pan located immediately above the firedoor and many other distinctive features. The joints of the new Duo-WELD are guaranteed indefinitely or for a lifetime.

A folder giving complete details of the

New 1931 Model Premier Duo-WELD may be had by addressing the Premier Company at Dowagiac, Michigan.

Norval O. Hexamer Joins Edwards Mfg. Co.

The Edwards Manufacturing Company, Cincinnati, announce that Norval O. Hexamer, formerly of the Canton Steel Ceiling Company, Canton, Ohio, has joined the Edwards organization and will be in complete charge of the steel ceiling division.

Mr. Hexamer has been identified with the steel ceiling field for many years and is one of the best known figures in this branch of the industry.

The Edwards Company have been making steel ceiling for many years. The Edwards line contains many patterns in all sizes and designs.

Artisan Office Has Many Visitors

Chicago seems to be the cross roads for the travels of quite a goodly share of the warm air heating industry these days. Whether there isn't enough business to keep the boys at home or whether there is so much business that everyone is on the jump after it, we won't try to ascertain.

Not many days ago Ralph Blanchard, president of Hart and Cooley Manufacturing Company, and E. S. Johnson, sales representative, were visitors. Mr. Blanchard reports that his company has nothing to be ashamed of for 1930 and that in spite of the bad times a very nice business was done.

James W. Brown of the Standard Foundry and Furnace Company, De-Kalb, also stopped in to say hello and pass along the good word that business was looking mighty fine and that things ought to break during this year.

George E. Robinson of the A. H. Robinson Company, Massillon, Ohio, paused long enough to say hello and to tell us that he is now located permanently in Denver, where he is taking care of the interests of the Robinson Company in the mountain states.

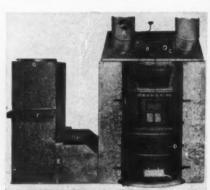
A couple of weeks ago L. D. Burroughs of the Hall-Neal Company, Indianapolis, stopped up to tell us that business for his company was satisfactory and that everyone in the organization is looking forward to better times and more profits during 1931.

All these men, representing large interests in our industry, are optimistic. If this optimism can be transmitted on down the line to the salesmen and through them to the dealers, some of the gloom should be dispersed.

Now-the Akron Air Blast and the Well Known Athanor

Built Into Automatically Controlled Air Conditioning Units

This unit provides for Positive Air Circulation; Automatic Humidifica tion; Filtered, Pure, Warm, Moist Air; and Automatic Temperature Regulation.



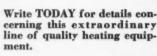


The New Akron Air Blast

-a giant of heating power because of its large heating surface.

The Athanor Smokeless All Cast Iron Furnace-

the best in its class.





NEWARK

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Manufacturers of Quality Furnaces for Half a Contury

The SIMPLEX

-a truly Automatic



HE Simplex Automatic Humidifier is truly automatic in that the rate of evaporation controls the volume of water which is fed into the pan. It has no float. It has the original drip and sight feed.

Placed on the market only four years ago it is now stocked by leading jobbers and profitably sold by dealers all over the country. It can be installed in an hour in any make of warm air furnace. Made of copper and brass, it will outlast any furnace in which it is installed.

Used as standard equipment on well known furnaces. Make them standard equipment on your installations, and let us increase your profits.

Write for details of our unusually attractive offer to dealers, jobbers or manufacturers

SALLADA MANUFACTURING CO. Minneapolis, Minn. 720 South 4th St.

Set One Furnace

WAMPUM BRAND



FURNACE CEMENT

and Let It Prove Itself

A furnace properly set with Lastik withstands the ex-tremes of expansion and contraction to which it may be subjected and gives years of gas-tight service.

It meets all the requirements of a truly superior furnace cement. It is odorless, pliable, soft, smooth, easy to pack and becomes hard under heat but will not crack. It is non-porous, firmly knit and acid-proof and does not shrink or swell.

When you have once tried Lastik you will use it al-

Send the coupon today



LASTIK PRODUCTS CORPORATION

Oliver Building, Pittsburgh, Pa.

Gentlemen:

I am interested in Lastik Wampum Brand Furnace Cement.
Send me full details.

Address..

My Jobber is ...

31

COMING

—a New

CHENAIR

PRODUCT

See American Artisan February 16

SILENTAIR

CONDITIONING UNITS

Manufactured by

A. GEHRI & CO., INC.

Tacoma

Established 1892

Washington



An Ideal Moderately Priced Fan for Doctoring Sick Warm Air Heating Plants

NO matter what kind of a warm air heating plant you may encounter, an A-C Heat Booster will positively increase its efficiency—get the greatest heat value out of the fuel consumed.

The A-C is an ideal fan for doctoring "sick" warm air furnaces because of its moderate price and the ease with which it can be installed with little change in the arrangement of the cold air return.

If you will demonstrate the A-C to home owners in your vicinity—now when they are needing heat and perhaps not getting it—you will find it a great seller. Home owners will welcome this efficient little air mover. The prices are well within their reach.

Why not cash in on this sales opportunity

A-C MANUFACTURING COMPANY

417 Sherman Avenue

Pontiac, Illinois

Write for complete details



-or ask your jobber.

Compact .

AIR FILTER



Perfectly Adapted for
General Ventilation
Industrial Air Cleaning
Air Compressors
Diesel Engines and
Warm Air Heating Systems

FOR THE FIRST TIME

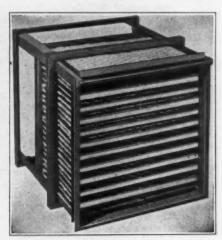
Dry Fabric Filtration in Practical Form for General Use

Based on a principle old as the hills—but with mechanical features adapting it to modern needs. Undoubtedly the most adaptable filter ever made.

It will pay you to know all about it.

And it will pay you to add this last m o d e r n touch to your mechanical warm air installations.

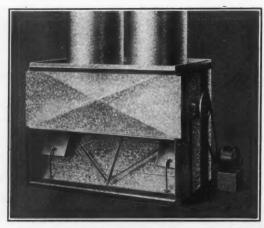
Write for complete information



Filter element partly removed from its frame

INDEPENDENT AIR FILTER COMPANY
29 South Clinton Street Chicago, Illinois

BRUNDAGE FORCED AIR SYSTEM



Outlet side of the new Brundage Forced Air System showing closing position of damper when fans are operating.

THE above illustration shows the "D" series. This model is equipped with a large opening for gravity flow when fans are not in operation.

COMPLETE **EFFICIENT** QUIET COMPACT



The Brundage Company KALAMAZOO, MICHICAN



More money for dealersgreater comfort and fuel saving for your customers-that's your opportunity with this dependable, full electric regu-

Acts instantly when heat changes one degree, or less if desired. Nothing to forget. Popular prices 8-day, jewelled clock control model, full electric \$80. Same, without clock control \$55.

These dependable instruments are flawlessly designed and built, by the manufacturers of the MASTER Gradual Operation Heat Regulator.

Get our discounts and full details. Write today.

WHITE MFG. CO.

2362 University Ave., St. Paul, Minn.

Full Electric without clock control, \$55



This Blower Gets YOU the Business

the last word in forced air circulation

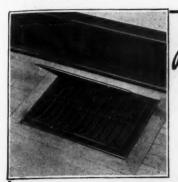
HERE'S the only blower that positively provides a fully-balanced distribution of air to both inlets —vital to proper blower operation. The improved Ampeco Rotary Blower assures positive and uniform heat delivery. Mechanical control; quiet; non-leaking ring oil bearings; low priced; a tremendous business-getter and money-maker for the live dealer.

Built with or without dampers which open automatically when the blowers stop, permitting gravity circulation. Get your share of this profitable forced air business. Write for literature and full information today.

AMERICAN MACHINE PRODUCTS COMPANY Marshalltown, Iowa

For 15 Years Manufacturers of Precision Products





SOMETHING

DIFFERENT ATTRACTIVE PRACTICAL

FLOOR REGISTERS

New beauty, greater free air capacity. An efficient register plus a shield which protects walls. An ornament to any room—does not become dust laden as it has no shutters.

Write today for full details and circulars

JOBBERS WANTED

port.

GENERAL

PRODUCTS CORP.
3607 Orchard Avenue
Indianapolis, Ind.



WHY **Double Arc** Welding?

HEADS of Pure Air Furnaces, welded by our double arc welding process, will never come off as the welds are stronger than the body metal itself.

In adapting this method

exclusively and scrapping Pure-Air Warm Air Furnace expensive riveting equipment we are not experimenting. Scientific testing has proved the superiority of double arc welding. These facts are interestingly presented in our free booklet "Welding vs.

Send for this interesting Booklet.





ENTERPRISE

BOILER & TANK WORKS

1955 Long Ave., Chicago Send me your free booklet on "Welding vs. Riveting," as ad-vertised in AMERICAN ARTI-SAN.

Name

Address

Town.

DON'T let another season pass without using the H & C Federal line of furnace accessories. You'll find each item supremely well made and very attractively priced. Furthermore, by ordering both your accessories and registers from this one reliable source wou can obtain reliable source, you can obtain the additional benefit of full freight allowances.

Catalog and prices will be sent on request

Regulators 3 styles to choose from. Furnished in complete sets, one to a box, for each furnace—with any desired combination of pulleys, chain, hooks, etc.—or separately.

Pulleys -Smooth-running steel pulleys to meet every installation requirement.

Chain -All the leading styles and sizes, plain or rust-proofed.

Dampers —Sturdy, well made, of disc. Made in 6", 7", 8", 8½", 9", 10", 12", and 14" sizes. Now packed in cartons—½ gross to the carton.

No-Rivet Damper Clips and Tips —Made of heavy mate-holes, but can be fastened without rivets by means of prongs provided.

HART & COOLEY MANUFACTURING CO.

Successors to Federal Mfg. Co.

61 W. KINZIE ST., CHICAGO

Manufacturers of

The AIR CAPACITY LINE of Warm Air Registers

and the H & C Automatic HEAT CONTROL



One

Write for Catalog and Prices

SUPREMELY EFFICIENT— WHOLLY AUTOMATIC; MOTOR DRIVEN; TROUBLE PROOF; LOW PRICED—



Offers An Outstanding Opportunity for Sales and Profits in the Regulator Field



ASIDE from price, considering its mechanical features alone, the H & C Automatic Heat Control is the kind of furnace regulator that any first-class furnace dealer would prefer to handle—quick-acting, motor driven, sturdy, built to give many years of absolutely trouble-free service. Selling as it does, however, way below anything at all comparable to it, the ready market for the H & C Automatic Heat Control is almost unlimited. There are some mighty fine extra profits ahead for dealers handling this outstanding heat control. Why not get in on the ground floor?

See it at your jobber or write direct to us if he, as yet, doesn't stock the line.



HART & COOLEY MFG. CO.

General Sales Office

61 West Kinzie St.

1 1

Chicago, Ill.



This Book FREE !

This Free Book contains 32 pages of facts that every warm air heating dealer and salesman should know.

The McIlvaine Oil Burner operates on an entirely different principle from others. It's the Ideal Method of Warm Air Heating. Our Free Book, "Balanced Heat" tells why.

Write for Dealers Proposition

McILVAINE BURNER CORP.

747 Custer Avenue, Dept. A EVANSTON, ILL.



FAMOUS

for the cozy comfort of its appointments and the friendly spirit of its service, the Bismarck is Chicago's outstanding hotel for out-of-town visitors. Add to this its fame for Good Food . . . its most reasonable rates . . . its close proximity to all amusement and business centers . . . and you have the secret of The Bismarck's constantly growing popularity. Write for booklet with downtown map.

Rooms, \$2.50 up-With Bath, \$3.50 up

BISMARCK HOTEL CHICAGO

RANDOLPH AT LA SALLE

931

A BIG YEAR AHEAD

—for the improved

A popular name that identifies dependable heating systems; a quality furnace that can be sold at competitive prices; and now, another improvement—the new Rybolt One-Piece Radiator with smoke and cleanout collars cast on - these and other outstanding advantages assure Rybolt dealers continuation of the increasing sales and profits they have enjoyed in the past.

> Write or wire now for our interesting proposition

THE RYBOLT HEATER COMPANY

Ashland, Ohio

Cincinnati

Indianapolis





Send the Coupon for Catalog Showing Complete 1931 Rock Island Line

DO	CV	TOT AT	M	REGIS	TER	CO
no	CIL	TO LUCK	W	HEOL	A RULE	uv.
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Rock Island, Ill.

Send me your new catalog which describes in detail your new Steel Floor Register and Steel Cold Air Ventilating Face as well as your full line of Steel Side Wall Registers.

Address.



The Two Piece Radiator Lectromelt Brillion

Despite its moderate cost, this two piece radiator job embodies every important selling feature. Massive in appearance. High Lever Shaker. Big Feed Doors, etc. Now with 50% greater heat resistance and stronger with Lectromelt Process.

Write today for details of the new "Lectromelt" Process. Learn how it produces a superior product at no extra cost.

New "LECTROMELT" Process Assures Brillion Quality Leadership

WITH supreme confidence in the future of warm air heating, and with a desire to continue supplying a furnace which is the last word in casting perfection, The Brillion Furnace Company has just installed and put into operation, a huge new electric furnace for melting the cast iron used in Brillion furnaces.

There is no other installation of this kind, in the United States for making furnace parts by electric heat. The reason for using an electric furnace is to provide the best.

- (1) "Lectromelt" castings have 50% greater heat resistance.
- (2) "Lectromelt" produces stronger castings.
- (3) "Lectromelt" grey iron, produced by the Lectromelt process is a more dense and more uniform metal than ordinary castings.
- (4) The Lectromelt process makes for complete control of the molten material during the casting process.

By means of this process we have provided a truly superior product at no additional cost to you. The Brillion furnace continues to be your best buy by far.

Brillion Furnace Co.
Brillion Wis.



The Big Heavy Lectromelt Brillion

The ideal furnace for air conditioning jobs, industrial buildings and church work. The radiator design, the dome and feed section always have been the last word in casting perfection, now further perfected with Lectromelt.

WESTERN



The sturdy Western Steel Furnace has won its place in the high esteem of home owners throughout the country by its long-time service records plus its ready adoption of up-to-the-minute heating methods.

WESTERN STEEL PRODUCTS CO. 130 Commonwealth Ave., Duluth, Minn.



An Emblem of Quality

The dealer who has never sold Torrid Zone steel furnaces has no conception of the many advantages this furnace line offers. To say you are familiar with Torrid Zone construction is not enough. There are, free engineering service, newspaper and dealer help advertising, financial aid, an unusual va-

riety of furnace deliveries made possible by large warehouse stocks, and a score of other Torrid Zone service features of vital interest to every furnace dealer. Why not investigate for yourself Torrid Zone possibilities. Write for complete information on the Torrid Zone diagnosis of the Torrid Zone diagn

LENNOX FURNACE COMPANY, INC.

GILTEDGE

has always been a profit maker for the dealer

Write for agency details today SCHWAB FURNACE & MFG. CO.

283 Clinton Street

Milwaukee, Wis.

File This Copy

When you have finished reading this issue of AMERICAN ARTISAN, pass it on to others in your organization, marking the articles in which they should be particularly interested.

Then file it for future reference. You never know when you will encounter a problem in your business that is covered in this very issue.

TWO TAYLOR'S **BRANDS**

to Tie to

First in the minds of sheet metal men is our famous HAND MADE roofing tinthe highest quality, longest lived roofing tin in the world, the old "TAYLOR'S" Old Style, known since 1905 by the new

Target and Arrow 以ROOFING 7

Now we have gotten out a New Tin, but the best machine made plate ever produced, for those who want to pay less.

> Taylor's Extra Coated 40 lb. Copper Bearing O. H.

Ample stocks carried by all distributors. Ask them for TAYLOR'S.

N. & G. TAYLOR COMPANY CUMBERLAND, MARYLAND Headquarters for Good Roofing Tin Since 1810

.WHITNEY LEVER PUNCHES.

Time Saved in the Shop

Is Money in the Bank



Whitney Handy Vise

Here is an item that costs very little but proves indispensable once you get used to it. This Vise is handy, practical and securely holds any of the Whitney Lever Punches. Well made of high-grade Malleable Iron. It bolts to bench or can be bolted to plank and used portably. Weighs

only 5 lbs.

No. 8. Close Corner Punch

The No. 8 Close Corner Punch shown in the vise has a capacity ¼ in. through ⅓-in. iron. Weighs 7½ lbs. Length 18½ inches. Depth of throat 2 inches. Upper lever does not throw back to right angles. Simple, easy and quick punch changing. Side Gauge with marked fractional inches. Punches and dies 1/16 to 7/16 by 1/64 inch 7/16 by 1/64 inch.

Write for Complete Catalog

W. A. WHITNEY MFG. COMPANY

636 Race Street

Rockford, Ill.

Order from Your Jobber



Look for This

The Choice of C



PEXTO Squaring Shears

Capacity-No. 18 gauge mild steel and lighter Number 122 Length for sheets—ins. 22

Furnished complete with full equipment of front and rear gauges and one pair of bed extension arms. Nos. 137 & 142 regularly furnished with hold-down that actuates with upper knife bar. Nos. 122 & 132 are not furnished with holddown. Steel extension treadle is applied to No. 142, other numbers include cast iron treadle. Knife guard for Nos. 122 & 132 may be applied when specified at a nominal extra cost.

A dependable shears for squaring and trimming lighter gauges of material. The upper knife bar is fitted with a truss-rod. Springs are compression type, fully enclosed, for ease of operation, and to further avoid spring flying in case of breakage. In case of spring breakage, with this construction, the machine will continue to function, avoiding serious delays as are usually incurred while waiting for spring replacements.

A PEXTO development for higher perfection in a moderately-priced Foot Squaring Shears of general usefulness.



THE PECK STOW & WILCOX CO. Southington, Conn.

~ MARKET QUOTATIONS ~

AMERICAN ARTISAN is the only publication quoting Prices on Metals, Sheet Metal Equipment and Supplies, Warm Air Heating Supplies and Accessories, corrected bi-weekly. These quotations are not guaranteed but are obtained from reliable sources and reflect nation-wide market conditions at the time of going to press.

NOTE-These prices are Chicago Warehouse Prices to which must be added territory differentials

METALS	COPPER	Square Corrugated	PASTE
	Sheets, Chicago base	28 gauge55 % 26 gauge40 %	Asbestos Dry Paste
	Wire, plain rd., 8 B. & S. Ga. and heavier12 % c		200-lb. barrel
PIG IRON	LEAD	Portico Elbows Standard Gauge Conductor Pipe,	50-lb. pail
Chicago Fdy., \$17.50 No. 2 Southern Fdy. No. 2\$17.01 to 17.51 Lake Superior Charcoal	American Pig	plain or corrugated.	5-lb. bag 0.60
Lake Superior Charcoal 27.04 Malleable 17.50	Bar 7.50	Not nested	PIPE
FIRST QUALITY BRIGHT	TIN	Sq. Corr., A. & B. & Octagon	Galvanized Crated and nested (all
CHARCOAL TIN PLATES	Bar Tinper 100 lbs. \$32.00 Pig Tinper 100 lbs. \$1.00	28 gauge	gauges)
IC 20x28 112 sheets\$22.50 IX 20x28	SHEET METAL SUP-	Portico	Furnace Pipe
15.50 1XXX 20x28 15.50 17.00	PLIES, WARM AIR	1, 1%, 1% inch45%	Double Wall Pipe and Fit-
	FURNACE FITTINGS	Copper	tings Single Wall Pipe, Round Galvanized Pipe Galvanized and Tin Fittings60 %
TERNE PLATES Per Box	AND ACCESSORIES	16 oz. all designa50 %	Galvanised and Tin Fittings60 %
IC 20x28, 40-lb. 112 sheets\$24.00		Zinc	Per 100 lbs\$12.50
IC 20x28, 40-lb. 112 sheets \$24.00 IX 20x28, 40-lb. 112 sheets 26.50 IC 20x28, 25-lb. 112 sheets 20.50 IX 20x28, 25-lb. 112 sheets 23.50 IC 20x28, 20-lb. 112 sheets 19.00 % 20x28, 20-lb. 112 sheets 22.00	ASBESTOS	All styles60 %	Stove Pipe "Milcor" "Titelock" Uniform Blue Stove
IC 20x28, 20-lb. 112 sheets 19.00 v 20x28, 20-lb. 112 sheets 22.00	Paper up to 1/16	ELBOWS—Stove Pipe	28 gauge, 5 inch U. C.
"ARMCO" INGOT IRON PLATES	Roll board 5/32 to 5/6 e per lb. Mill board 8/32 to 5/6 e per lb. Corrugated paper (250 aq. ft. per roll) \$5.00 per roll	1-piece Corrugated, Uniform Blue	nested \$10.00 28 gauge, 6 inch U. C. nested \$11.00 28 gauge, 7 inch U. C.
		No. 28 Gauge. Dos. 5 inch\$1.15	nested
No. 8 ga.—110 lbs	ASBESTOS SEGMENTS	6 inch 1.25 7 inch 1.75	30 gauge, 6 inch U. C.
COKE PLATES	8 inper 25 sets \$1.85 9 inper 25 sets 2.10 10 inper 25 sets 2.85	Adjustable—Uniform Blue	30 gauge, 7 inch U. C.
	12 inper 25 sets 2.65	No. 28 Gauge, Uniform Blue.	rested 12.00
Cokes, 80 lbs., base, 20x28\$12.00 Cokes, 90 lbs., base, 20x28 12.20 Cokes, 100 lbs., base, 20x28 13.75 Cokes, 107 lbs., base, IC,	CEMENT FURNACE	5 inch	6 inch, 28 gaper doz. \$3.40
20128 19E the base IV	5-lb. cans, net	7 inch 2.10	REGISTERS AND FACES
20x28 14.75 Cokes, 155 lbs., base, 2X, 56 sheets 8.50 Cokes, 175 lbs., base, 3X, 9.35	25-lb. cans, net		Floor Registers
Cokes, 175 lbs., base, 3X,	CLIPS	FIRE POTS	Steel and Semi-Steel40 & 10 % All Cast Iron20 %
56 sheets 9.85 Cokes, 195 lbs., base, 4X, 56 sheets 10.25	Damper		Baseboard
	No-Rvet Steel, with tail pieces, per gross \$9.50 Rivet Steel, with tail pieces,	No. 02 Gasoline Tornh, 1 qt\$5.18	2-Piece40 & 10 % 1-Piece40-10 & 20 %
BLUE ANNEALED SHEETS	per gross 7.50 Tail pieces, per gross 2.40	No. 9250, Kerosene, or Gaso- line Torch, 1 qt 6.50	Adjustable Ventilators40 & 10 %
Base 10 gaper 100 lbs. \$3.35 "Armeo" 10 gaper 100 lbs. 4.15		No. 10 Tinner's Furnace Square tank, 1 gal 11.20	COLD AIR FACES
ONE PASS COLD ROLLED	Copper Footing41%	No. 15 Tinner's Furnace Round tank, 1 gal 10.70	
BLACK		No. 21 Gas Soldering Furnace 8.00	Steel and Cast, less than 40 & 10 % Steel, 14" and wider 65 & 10 % Cast, 14" and wider 60 & 10 % Special Cold Air Faces,
No. 18-20per 100 lbs. \$3.75 No. 22per 100 lbs. 3.70 No. 24per 100 lbs. 3.75	CORNICE BRAKES Chicago Steel Bending	No. 110 Automatic Gas Soldering Furnace	Cast, 14" and wider60 & 10 % Special Cold Air Faces,
No. 26	Nos. 1 to 6BNet	er	Steel or Cast40 & 10 % RIDGE ROLL
28per 100 lba. 4.00		GLASS	
GALVANIZED	CUT-OFFS	Single and Double Strength, A. all brackets	Galv., Plain Ridge Roll, b'dld Galv., Plain Ridge Roll,
No. 16per 100 lbs. \$3.85	Cal., plain, round or cor. rd. 26 gauge	Single and Double Strength, B, all brackets	CTAILED10-10 %
No. 18 per 100 lbs. 3.95 No. 20 per 100 lbs. 4.15 No. 22 per 100 lbs. 4.15 (Standard differentials on extras to			SCREWS Sheet Metal
	DAMPERS	HANGERS	
No. 26 per 100 lbs. 4.70	Yankee Warm Air 7 inch, doz\$1.60	Conductor Pipe	7, ½ 1 ½, per gross
No. 28 per 100 lbs. 4.85 "Armeo" 24 per 100 lbs. 5.95	6 inch, dok. 2.20 9 inch, dok. 2.80 10 inch, dok. 2.80 12 inch, dok. 2.80 12 inch, dok. 3.50 14 inch, dok. 5.00	Milcor Perfection Wire25 % Milcor Triplex Wire10 %	SHEARS, TINNERS'
BAR SOLDER	12 inch, doz	Eaves Trough	Viking\$22.00
Warranted 50-50 per 100 lbs. \$15.00	2.2 11.03, 30.00.00.00.00.00.00.00.00.00.00.00.00.0	Steel (galv. after forming) from	Lennox Throatless
45-55	EAVES TROUGH	Selflock E. T. Wire, List 10 %	No. 18
Flumbersper 200 lbs. 20.00	Galv. Crimpedge, crated75-15 % Zinc		(f. o. b. Marshalltown, Iowa.)
ZINC In Slabe	ELBOWS	HOOKS	SHOES
SHEET ZINC	Conductor Pipe	Conductor	Galv. 28 Gauge, Plain or Corrugated, round flat crimp
Cask Lots (600 lbs.)	Galv. plain or corrugated, round flat Crimp.	"Direct Drive" Wrought Iron for wood or brick15 %	24 gauge, round flat crimp15 %
Sheet Lots (100 lbs.) 15.00	28 gauge50-10 %		SNIPS
BRASS	24 gauge	MITRES	Tinners'Net
Sheets, Chicago base	Plain Rd and Rd Core	Galvanized Steel Mitres	VENTILATORS
Wire, Chicago base	28 gauge	28 gauge60-20	Standard30 to 40 %

1931

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2.50

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.00

.25

.00

.00

.40

18

2

%

26.26.25 %

5

A Heat Hustler Fan Forces Air Through a Single Warm Air Pipe

Heats garages, sun porches and other rooms that will not heat by gravity. Mounts directly in the warm air pipe. Draws heat from the furnace and forces it into the hard-to-heat room. Quick heat for a

Four reasons why you should use the American Heat Hustler:

It uses a positive pressure, rotary type fan.
 Motor is outside the warm air flow, adding greatly to life of motor and leaving as much space for gravity air flow as before the heat Hustler was installed.

3. It is quiet.
4. Furnished for either automatic or manual control.

Price list, with descriptive literature showing different models, sizes, etc., will be sent you by return mail upon receipt of your request. CLIP AND SEND THIS AD IN NOW!

AMERICAN FOUNDRY & FURNACE COMPANY

Bloomington,

World's largest manufacturers of blower furnace systems

Illinois



Permanently Perfect Operating Registers-

Also Grilles and Clothes Chute Doors

Registers of every type, size Ventilating.

(Patented)

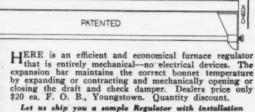
AUER REGISTER CO.

3608 Payne Avenue CLEVELAND, OHIO



HEAT REGULATOR—at a price well within the reach of any home owner.

purely MECHANICAL, non electrical



Let us ship you a sample Regulator with installation instructions on 30 Days free trial.

NOLL REGULATOR CO. 143 W. Earle Ave. Youngstown, Ohio

The BOCK Oil Burner

for Warm Air Furnace Heating

Every one of your customers is interested in an oil burner which will operate efficiently in a warm air furnace.

The constant flame principle of the Bock insures such efficient operation. The Bock is (1) dependable and quiet (2) extremely simple (3) distributes heat evenly to all castings (4) completely automatic, and (5) its high and low flame operation eliminates the need for electrical ignition or gas pilot.

The Bock solves the prob-lem of efficient oil heat-ing in a warm air furnace. Write for details.

The Bock Oil Burner Corporation

Madison

Wisconsin



The AUTOMATIC DRIP HUMIDIFIER

Entirely Different Write for Details

Correct and Controlled Humidity

THE Automatic Drip Humidifier is unlike all others. The amount of humidity desired is regulated. It is simple, fool-proof, durable, reliable and high grade in every respect.

For every warm air heating installation and especially desirable with oil heat because of control feature.

For efficiency and profits sell the Automatic Drip Humidifier—send for complete information today.

AUTOMATIC HUMIDIFIER COMPANY

CEDAR FALLS. IOWA

MERICA REGISTERS

WHEN you order wood registers be sure of getting the best by buying these famous wood faces—

Known as the finest for over 21 years

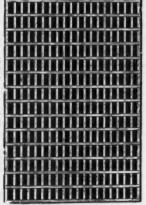
They add extra value without extra cost. We make nothing but Wood Registers and only the best.

Write today for catalog and latest price list.

The AMERICAN WOOD REGISTER CO.

Plymouth

Indiana



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installed dealer price 822.75

"Sheer Comfort" Heat Regulator is all electric—yet it costs less and gives four exclusive safety features found in no other heat regulator at

any price. No batteries, nothing to wind or oil. Easy to install. Ask your jobber or write, H. M. Sheer Co., 213 Hampshire St., Quincy, Ill.



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Warm Air Furnace Fan Co., Cleveland, Ohio
Sterling, Ill.

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Aluminum Sheets J. M. & L. A. Osborn Co., Cleveland, Ohio

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Blast Gates Berger Bros. Co., Philadelphia. Pa.

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Brundage Co.,
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Malmazzoo, Mich.
Ksalamazzoo, Mich.
Hermansville, Mich.
Fan Co.,
Cleveland, Ohio
Sterling, Ill.

Bolts-Stove

Lamson & Sessions Co., Cleveland, Ohio Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

-Bending

Brakes—Benuing
Dreis & Krump Mig. Co., Chicago, Ill.
Interstate Machinery Co., Chicago, Ill.
Ryerson & Son, Inc., Jos. L.,
Chgo., N., Ill., Jos. L.,
Peck, Stow & Wilcox Co.,
Southington, Conn.

Dreis & Krump Mfg. Co., Chicago, Ill.

Brass and Copper

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Copper & Brass Research Association,
New York, N. Y.
Revers Copper & Brass, Rome, N. Y.

Revere Copper & Brass, Rome, N. Y.

Cans-Garbage Diener Mfg. Co., G. W., Chicago, Ill. Osborn Co., The J. M. & L. A., Cleveland. Ohio

Castings-Malleable

Fanner Mfg. Co., Cleveland, Ohio Ceilings-Metal

Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

Chaplets

Fanner Mfg. Co., Cleveland. Ohio

Cleaners-Vacuum Brillion Furnace Co., Brillion, Wia. National Super Service Co., Toledo, Ohio

Copper

American Brass Co., Waterbury, Conn. Chase Brass & Copper Co., Waterbury, Conn. Revere Copper & Brass, Rome, N. Y. Revere Copper & Brass, Rome, N. Y. Bockford Sheet Steel Co. Rockford, Ill.

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Chicago, Ill.

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Accessories

Accessories

Accessories

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Accessories

Chicago, III.

Holland, Mich.
Boston, Mass.
Milcor Steel Co., S. M., Boston, Mass.
Mil., Canton, Chgo., La Crosse, K. C.

Parker-Kaion Corp., New York, N. Y.

Dampproofings Lastik Products Corp., Pittsburgh, Pa.

Damper Regulators Sheer Co., H. M., Quincy, Ill.

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The Stanley Electric Tool Co.,
New Britain, Conn.

Drive Screws-Hardened Metallic Parker-Kalon Corp., 190 Varick St., New York

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Rockford Sheet Steel Co.,
Rockford, Ill.

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Filters-Furnace

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Warm Air Furnace Fan Co., Cleveland, Ohio

Fittings-Conductor

Barnes Metal Products Co., Chicago, Ill.
Braden Mfg. Co., Terre Haute, Ind.
Lerow, David. New York, N. Y.
Milcor Steel Co.,
Mil., Canton, Chgc., La Crosse, K. C.

Fluxes—Soldering Kester Soldering Co.,

Furnace Cement Connors Paint Mfg. Co., Wm., Troy, N. Y.
Lastik Products Corp., Pittsburgh, Pa.
Milco Steel Co., La Crosse, K. C.
Technical Products Co., Pittsburgh, Pa.

Furnace Chain Hart & Cooley Co., Holland, Mich.

Furnace Cleaners-Suction Brillion Furnace Co., Brillion, Wia. National Super Service Co., Toledo, Ohio

Furnace Fans

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American Fdy. & Furnace Co., Bloomington, Ill.
Brundage Co., The, Kalamazo, Mich.
Lakeside Co., Hermansville, Mich.
Robinson Co., A. H. Massillon, Ohice
Warm Air Furnace Fan Co.,
Cleveland, Ohic
Watt Mfg. Co., Sterling, Ill.

Kleenaire Filter Co., Stevens, Point, Wis, Warm Air Furnace Fan Co., Ohio

Furnace Pekers Fanner Mfg. Co. Cleveland, Ohio

Furnace Pulleys Cooley Co., Holland, Mich. Hart & Cooley Co..

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Noll Regulator Co., Youngstown, Ohio
Sheer Co., H. M.,
White Mfg. Co.,
Minneapolis, Minn.

Furnace Rings Forest City-Walworth Run Foundries Co., Cleveland, Ohio

Furnace Switch-Automatic Payne Furnace & Supply Co., Beverly Hills, Cal.

Furnaces—Gas
Pearce, Columbus, Ohio Calkins & Pearce, Columbus, Ohio
Lennox Furnace Co., Marshalitown, Iowa
Mueller Furnace Co., L. J.,
Milwaukee, Wia.
Payne Furnace & Supply Co.,
Beverly Hills, Cal.
Robinson Co., A. H., Massillon, Ohio
Rudy Furnace Co.,
Wise Furnace Co.,
Columbus, Ohio

Furnaces-Oil Burning Motor Wheel Corp., Heater Div., Lansing, Mich.

Furnaces-Warm Air

Furnaces—Warm Air
Agricola Furnace Co., Gadsden, Ala.
American Fdy. & Furnace Co.,
Bloomington, III.
American Furnace Co., St. Louis, Mo.
Armstrong Furnace Co., Columbus, O.
The Beckwith Co., Dowagiac, Mich.
Brillion Furnace Co., Brillion, Wia.
Dowagiac Steel Furnace Co.,
Enterprise Boiler & Tank Works.
Chicago, III.
Forest City-Walworth Run Fdy.,
Cleveland, Ohio
Fox Furnace Co.,
Graff Furnace Co.,
Hall-Neal Furnace Co.,
Cleveland, Ohio
Elvria, Ohio
Elvria Forest City-Walworth Run Fdy.

Graff Furnace Co., Elvris. Ohio
Graff Furnace Co., Elvris. Ohio
Graff Furnace Co., Indianapolis, Ind.
Henry Furnace & Fdy. Co., St. Louis, Ind.
Langenberg Mfg. Co., St. Louis, Ind.
Langenberg Mfg. Co., Loudon, Ohio
Lennox Furnace Co., Loudon, Ohio
Lennox Furnace Co., Louis, Mo.
London Furnace Co., Louis, Mo.
May Flebeger Furnace
Marshalltown, Jowa
Syracuse, N. Y.
May Flebeger Furnace Co., The., Peorfs, Ill.
Midland Furnace Co., Columbus, Ohio
Motor Wheel Corp., Heater Div.,
Lansing, Mich.
Mt. Vernon Furnace & Mfg. Co.,
Mt. Vernon, Ill.
Mueller Furnace Co., L.
Millwankes, Wis. Mt. Vernon Furnace Co., L. J., Muller Furnace Co., L. Milwaukee, Wis.
Payne Furnace & Supply Co.
Beverly Hills, Cal.
Premier Warm Air Hester Co.,
Dowagiac, Mich. Premier Waim an Downgiac, Mich.
Peerless Foundry Co., Indianapolis, Ind.
Robinson Furnace Co., Chicago, Ill.
Rybolt Heater Co., Ashland, Ohie
Rudy Furnace Co., Downgiae, Mich.
Standard Fdy. & Furnace Co.
De Kalb, Ill. Standard Fdy. & Fulls. De Kalb, In.
Success Heater Mfg. Co., Des Moines, Iowa
Schwab Furnace & Mfg. Co.,
Millwankse, Wis.
Thatcher Furnace Co., Newark, N. J.
XXth Century H. & V. Co.,
Akron, Ohio XXth Century n. XXth Century n. Minneapolis, Minn. Waterman-Waterbury Co., Minneapolis, Minn. Western Steel Products Co., Unit, Minn. Akron, Ohlo Gas Burning Attachments

Calkins & Pearce, Munkel-Rippel Heating Co., Columbus, Ohio

Grilles

Auer Register Co., Cleveland, Ohio Harrington & King Perforating Co., Chicago, Ill. Hart & Cooley Co., New Britain, Conn. Independent Register & Mfg. Co., Cleveland Tuttle & Bailey Mfg. Co., Chicago, Ill. U. S. Register Co., Battle Creek, Mich.

Guards—Machine and Beit
Harrington & King Perforating Co.,
Chicago, Ill.

Handles—Boiler Berger Bros. Co.. Philadelphis, Pa

Handles-Soldering Iron

Hyro Mfg. Co., New York, N. Y. Handles—Furnace Door Fanner Mfg. Co.. Cleveland, Ohio

Hangers-Eaves Trough

Apex Gutter Hanger Corp., New York, N. J. Philadelphia, Pa Berger Bros. Co., Philadelphia, z-Chase Brass & Copper Co., Waterbury, Conn. Milcor Steel Co., Mil., Canton, Chgo., La Crosse, E. C.

Heat Regulation Systems

Minneapolis-Honeywell Regulator
Co.. Minneapolis, Minn.
Noll Regulator Co., Youngstown, Ohio
Sheer Co., H. M.,
White Mfg. Co.,
Minneapolis, Mins.

Heaters-Cabinet

Fox Furnace Co., Elyria, Ohio Mt. Vernon Furnace & Mfg. Co., Mt. Vernon, Ill. Mt. Vernon Furnace & Mfg. Co.,
Motor Wheel Corp., Heater Division,
Lansing, Mich.
Payne Furnace & Supply Co.,
Beverly Hills, Cal.
Waterman-Waterbury Co.,
Minneapolis, Mina.

Heaters-School Room

Meyer Furnace Co., The, Peoria, Ill. Western Steel Products Co., Duluth, Minn. Waterman-Waterbury Co., Minneapolis, Mina

Humidifiers

Automatic Humidifier Co., Cedar Falls, Iowa
Diener Mfg. Co., G. W., Chicago, Ill
Meyer & Bro. Co., F., Peoris, Ill
Sheer Co., H. M., Ouiney Ill
J. L. Skuttle Co., Dowagiac, Mich.
Sallada Mfg. Co., Minneapolis, Minn.

Lath-Expanding Metal Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

Machines-Crimping

Rertsch & Co., Cambridge City, Ind. Yoder Co., The, Cleveland, O.

Machinery-Culvert

Bertsch & Co., Cambridge City, Ind. Interstate Machinery Co., Chicago, Ill.

Machinery-Rebuilt Chicago Interstate Machinery Co.,

Machines

Machines

Machines

Ambridge City, Ind

Dreis & Krump Mfg. Co., Chicago, III.

Hyro Mfg. Co., New York, N. Y.

Interstate Machinery Co., Chicago, III.

Marshalltown Mfg. Co.,

Marshalltown, Iows

Osborn Co., The J. M. & L. A.,

Cleveland, Ohio

Ryerson & Son, Inc., Jos. T.,

Chgo, N. Y., St. L., Dett, Cleve.

The Stanley Electric Tool Co.,

New Britain, Conn.

Whitney Mfg. Co., W. A.,

New Britain, Conn.

Wider Co., The,

Cleveland, O.

Cleveland, O.

Metals-Perforated

Harrington & King Perforating Co., Chicago, Ill

Miters-Eaves Trough

Barnes Metal Products Co., Chicago, Ill. Berger Bros. Co., Philadelphia, Fa. Braden Mfg. Co., Terre Hauts, Ind. Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

Nails-Copper and Brass Chase Brass & Copper Co., Waterbury, Conn Revere Copper & Brass, Rome, N. Y

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BUYERS' DIRECTORY

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Nails-Hardened Masonry Parker-Kalon Corp., New York, N. Y.

Berryman System of Oil Heating, Inc., Chicago, Ill. Bettendorf Mfg. Co., Bettendorf, Iowa Bock Oil Burner Co., Madison, Wis. McIlvaine Burner Corp., Eranston, Ill. Silent Automatic Corp., Detroit, Mich.

Paint Minneapolis-Honeywell Regulator Co., Troy, N. Y.

Minneapolis-Honeywell Regulator Minneapolis, Minn.

Minneapolis-Honeywell Regulator Minneapolis, Minn.

Minneapolis-Honeywell Regulator Minneapolis, Minn.

Minneapolis-Honeywell Regulator Minneapolis, Minn.

Minneapolis-Honeywell Regulator Minneapolis, Minneapo

Patterns

Perforated Metals Harrington & King Perforating Co., Chicago, Dl.

Pipe and Fittings-Furnace Henry Furnace & Fdy. Co., Cleveland, Ohio Meyer & Bro. Co., F., Peoria, Ill. Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C. Osborn Co., The J. M. & L. A., Cleveland, Ohio Peerless Foundry Co. Indianapolis, Ind. Lamson & Sessions Co. Cleveland. Ohio

Pipe and Fittings-Stove Peoria, Ill. Meyer & Bro. Co., F., Peoria, III.
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Bertsch & Co., Cambridge City, Ind.
Mil., Canton, Chgo., La Crosse, K. C.

Pipe-Conductor Barnes Metal Products Co., Chicago, Ill.
Berger Bros. Co., Philadelphia, Pa.
Milicor Steel Co.,
Mil., Canton, Chgo., La Crosse, K. C.

Bertach & Co., Cambridge City, Ind.
Byro Mfg. Co., Cambridge City, Ind.
Byro Mfg. Co., New York
Internstate Machinery Co., Chicago, Ill.
Ryemon & Son, Inc., Jos. T.,
Clebo., N. Y. St. L., Det., Cleve.
W. A. Whitney Mfg. Co., Rockford, Ill.

Punches-Combination Bench and Hand

Putty-Stove Connors Paint Mfg. Co., Wm., Troy, N. Y.

Radiator Cabinets Hart & Cooley Co., Holland, Mich.

The Beckwith Co., Dowagiae, Mich. Hart & Cooley Co., New Britain, Conn. Mt. Vernon Furnace & Mfg. Co., Mt. Vernon, Ill. Ranges-Gas

Registers—Warm Air
Auer Register Co.,
Forest City-Walworth
Co.
Co.
Co.
City-Walworth
Co.
City-Walworth
Co.
City-Walworth
City-Walworth
City-Walworth
City-Walworth
City-Wall
Holland, Mich.
Henry Furnace & Fdy.
Co.,
City-Walnd, Ohio
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City-Walnd, Ohio
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Ku-No Register Mfg.
Co.,
City-Walnd, Ohio
City-Registers-Warm Air Milwaukee, Wis.

Rock Island Register Co.,

Symonds Register Co.,

St. Louis. Mo.

Tuttle & Bailey Mfg. Co., Chicago, III.

United States Register Oo.,

Battle Creek, Mich.

Waterloo Register Co., Waterloo, Iowa

Register Shields

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Plymouth, Ind.
Auer Register Co.,
Cleveland, Ohio
Co.,
Dover, Ohio Auer Register Co., Cleveland, Ohio Marsh Lumber Co., Dover, Ohio Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

Regulators--Heat

Thompson Boat & Pattern Co.,
Decorah, Iowa

American Rolling Mill Co.,
Middletown, Ohio Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

Rivets-Stove

Lamson & Sessions Co., Cleveland, Ohio Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

Rolls-Forming

Roofing Cement

Lastik Products Corp., Pittsburgh, Pa.

Roof-Flashing

Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

Roofing-Iron and Steel

Hand

Hyro Mfg. Co., New York, N. Y.

Punches—Hand
Hyro Mfg. Co., New York, N. Y.
W. A. Whitney Mfg. Co., Rockford, Ill.

Putty—Stove

Roofing—Iron and Steel
Middle town, Ohio
Central Alloy Division, Republic
Steel Corp., Ioungstown, Ohio
Chicago, Ill.
Millor Steel Co.,
Mill., Canton, Chgo, La Crosse, E. C.
Obborn Co., The J. M. & L.A.,
Cleveland, Ohio
Ryerson & Sons, Inc., Jos. T.,
Chgo, N. Y., St. L., Det., Cleve.

Roofing-Tin Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.
Taylor Co., N. & G., Philadelphia, Pa.

Rubbish Burners

Schools—Sheet Metal Pattern Drafting

St. Louis Technical Institute, St. Louis, Mo.

Schools-Warm Air Heating St. Louis Technical Institute, St. Louis, Mo.

Screws-Hardened Metallic Drive Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C. Parker-Kalon Corp., 200 Varick St., New York

Screws-Hardened Self-Tapping, Sheet Metal

Screens-Perforated Metal

Scuppers Chicago, Ill. Aeolus Dickinson

Shears-Hand and Power Interstate Machinery Co., Chicago, Ill.
Marshalltown Mfg. Co., Marshalltown, Ia.
Peck, Stow & Wilcox Co.,
Bouthington, Conn.
Ryerson & Son, Inc. Jos. T., Ryerson & Son, Inc., Jos. T.,
Chgo., N. Y., St. L., Det., Cleve.
The Stanley Electric Tool Co.,
New Britain, Conn.
Viking Shear Co.,
Yoder Co., The,
Cleveland, O.

Sheet Metal Screws—Hardened, Self-Tapping Parker-Kalon Corp., 200 Varick St., New York

Sheets-Alloy International Nickel Co., New York, N. Y. Republic Steel Corp., Youngstown, Ohio

Sheets—Black
American Rolling Mill Co.,
Middletown, Ohio
Chicago, Ill. Middletown, Ohio Chleago, Ill. Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C. Osbora Co., The J. M. & L. A., Cleveland, Ohio Republic Steel Corp., Youngstown, Ohio Rockford Sheet Steel Co., Rockford, Ill. Ryerson & Son, Inc., Joa. T., Chgo., N. Y., St. L., Det., Cleve. Taylor Co., N. & G., Philadelphia, Pa.

Sheets-Iron American Rolling Mill Co., Middletown, Ohio
Milcor Steel Co., Milcor Mil Milcor Steel Co.,
Mil., Canton, Chgo., La Crosse, K. C.
Republic Steel Corp., Toungstown, Onio
Ryerson & Son, Inc., Jos. T.,
Chgo., N. T., St. L., Det., Cleve.

Sheets-Tin Taylor Co., N. & G., Philadelphia, Pa.

Shingles and Tiles-Metal Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C. Fanner Mfg. Co., Cleveland, Ohio

Sifters-Ash Diener Mfg. Co., G. W., Chicago, Ill.

Milcor Steel Co., Mil., Canton. Chgo., La Crosse, K. C.

Snips Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

Solder-Acid Core Kester Solder Co., Chicago, Ill.

Solder-Self-Fluxing Kester Solder Co., Chicago, Ill.

Solder—Rosin Core

Kester Solder Co., Chicago, III. Hart & Cooley Co., New Britain, Conn. Henry Furnace & Fdy. Co., Cleveland, Ohio

Solder Kester Solder Co., Chicago, Ill. Milcor Steel Co., Mil., Canton, Chgo., La Crosse, K. C.

Soldering Furnaces

General Products Corp.,
Indianapolis, Ind.

Harrington & King Perforating Co.,
Chicago, Ill.

Chicago, Ill.

Ryerson & Son, Inc., Jos. T.,
Chgo., N. Y., St. L.,
Det., Cleve.

Specialties-Hardware

Diener Mfg. Co., G. W., Chicago, Ill.

Stars-Hard Iron Cleaning

Fanner Mfg. Co., Cleveland, Ohio

Tinplate

Mil. Canton, Chgo., La Crosse, K. C. Osborn Co., The J. M. & L. A. Cleveland, Ohio Taylor Co., N. & G., Philadelphia, Pa.

Tools-Tinsmith's

Bertisch & Co., Cambridge City, Ind.
Dries & Krump Mfg. Co., Chleago, Ill.
Hyro Mfg. Co., New York, N. Y.
Interstate Machinery Co., Chicago, Ill.
Osborn Co., The J. M. & L. A.,
Clieveland, Ohio
Peck, Stow & Wilcox Co.,
Rockford Sheet Steel Co.,
Rockford Sheet Steel Co., Rockford, Ill.
Ryerson & Son, Inc., Jos. T.,
Chgo., N. Y., St. L., Det., Cleve.
The Stanley Electric Too. Co.,
Viking Sheer Co.,
Whitney Mfg. Co., W. A., Viking Shear Co., W. A., Rockford, Ill.

Torches

Trade Extension

Copper & Brass Research Association National Association of Flat Rolled Steel Manufacturers, Cleveland, Ohio

Trimmings-Stove and Furnace

Vacuum Cleaner-Furnace

Brillion Furnace Co., Brillion, Wis. National Super Service Co., Toledo, Ohio

Ventilators-Floor

Aeolus Dickinson Chicago, Ill.

Ventilators-Roof

Acolus Dickinson Chicago, Ill. Berger Bros. Co., Philadelphia, Pa. Paul R. Jordan & Co., Indianapolis, Ind. Milcor Steel Co., Mil., Canton, Chgo., La Crome, K. C.

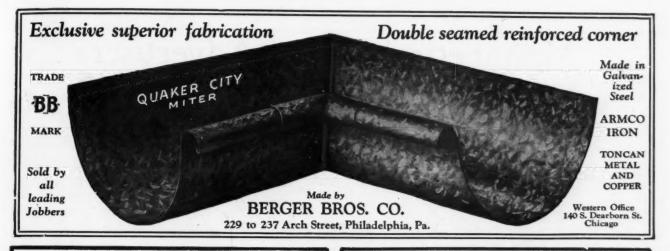
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Wood Faces-Warm Air

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Mil., Canton, Chgo., La Crosse, K. C.
Parker-Kalon Corp...
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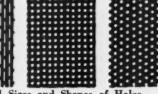




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Munkel-Rippel Heating Co.*	****
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WANTS AND SALES

Yearly subscribers to the AMERICAN ARTISAN may insert advertisements of not more than fifty words in our Want and Sales Columns WITHOUT CHARGE for three insertions.

Such advertisements, however, must be limited to help or situation wanted, tools or equipment for sale, to exchange or to buy, business for sale or location desired, and must reach our office ten days prior to date of publication. This privilege is not extended to manufacturers or jobbers—or those making a business of buying and selling used machines—employment agencies and brokers.

When sending advertisement state whether your name or blind number is to be used.

SITUATION WANTED

Situation Wanted—First class sheet metal worker Experienced in general sheet metal work, blowpipe, skylight, furnace and ventilation. Would like to connect with some reliable concern either with or without hardware. At the end of one year if satisfactory, I would like to buy an interest or the entire business. Prefer northwestern Iowa or southern Minnesota, in town of about 10,000 to 15,000. Married, sober and reliable. Address J-531, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

Situation Wanted—Want work as plumber and sheet metal worker in shop with Hardware store. Have had experience as clerk in store; can lay out own patterns and work them. Have small family and want steady year 'round job. Twenty-five dollars per week to start if employed by January 1st. Would consider buying good going shop on payment plan. Address E-530. AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

Situation Wanted—After January first, will be open for position. Have had twenty years of experience in sales, sales managing and handling of canvassers. Can take full charge of furnace installations and laying out plans. Can furnish surety or cash bond if required. Best of References. Address AMERICAN ARTISAN, 139 N. Clark Street, Chicago, Illinois, Box D-530.

Situation Wanted—By sheet metal worker with twenty years experience in contract shop. Would like to connect with shop wanting steady man who can do the work. Will come on thirty days trial. South Iowa, Illinois, Missouri or Kansas. Address K-530, AMERICAN ARTISAN.

Situation Wanted—First Class Licensed Plumber, sheet metal worker and heating man, steady, sober, and competent in all branches of the trade, would like steady position; or will take shop on commission. Address Arthur Greeter, Lake Geneva, Wisconsin. Z-529

Situation Wanted—By First Class radiator repair man. Can recore and rebuild all makes from a Ford to an airplane. Can also do furnace work. Address L-530, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

SITUATION WANTED

Situation Wanted—Would like to get in touch with parties interested in employing a salesman for gas fired warm air furnaces (Traveling for manufacturers). Have had seven years experience in gas furnace heating including estimating full costs, installations in both gravity and forced air heating. Have sold and supervised installations of approximately 600 jobs in this territory. Can give best of references. Address C-531, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

Situation Wanted—Twenty years experience in estimating, layout, selling and installing forced air heating and ventilating systems, and all kinds of roofing and sheet metal work. Can fill any position. Want connection with reliable company, preferable in Texas or West. Best of references furnished. Address H-531, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

Situation Wanted—Sheet Metal Worker and furnace man wants a steady position. Thirtynine years old, married, steady and sober. Can read blueprints, knows the standard code, can lay out any pattern. Have had blow-pipe and large heating experience. Willing to clerk. Can estimate if necessary. Address K-531, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

Situation Wanted—By man 54 years of age. Would prefer traveling position in Ohio although would be glad to entertain any offer in the furnace line. At the tin or sheet metal business practically all my life. Know, or have called on personally, around 150-200 furnace dealers in Ohio. Best of references furnished. Address W. D. Clemens, 622 Patterson Ave., Canton, Ohio.

Situation Wanted—Would like to hear from some hardware firm who is in need of a good hardware clerk and salesman on or before April 1st. Job to be steady the year round. Twenty years of experience. Steady and reliable, Wisconsin preferred. Address O-531, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

Situation Wanted—Have had six years experience as an executive in warm air furnace manufacturing. Can handle credits, collections, sales correspondence and purchasing of materials; also familiar with registers, fittings, and filling orders for repair parts. References on request. Address C-532, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

Situation Wanted—By man thirty-five years of age, single, ten years experience in hot water, steam and warm air heating. Also sales managing and handling canvassers. Position wanted as salesman for a reliable furnace manufacturer or salesman and engineer for dealer. Address Geo. A. Whiteman, P. O. Box 112, Rochester, N. Y. G-531

Situation Wanted—Have traveled Michigan and Indiana eight years selling high grade boilers, cast and steel furnaces and accessories. Can figure plans. Have a large acquaintance throughout this territory. Am married, own car, and can furnish references. Address Travers Daniel, Jr., 817 Merritt St., S.E., Grand Rapids, Mich.

Situation Wanted—Have had 15 years Warm Air Heating experience. Familiar with every detail of residence, school, church or industrial heating. Would prefer the southeast, either in office of manufacturer or as district representative of national organization. Address A-531, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

Situation Wanted—Tinner wants job. Twelve years experience; 34 years old; can do furnace work and radiator repairing; good reliable worker. Will go anywhere. State wages in first letter. Address M-530, AMERICAN ARTISAN. 139 N. Clark St., Chicago, Ill.

Situation Wanted—Modern Warm Air Heating Expert can qualify for any position with large heating firm. Expert in building trade and as high class factory representative. Address O-530. AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

Situation Wanted—Connection with a high grade furnace manufacturer as salesman, wanted. Illinois, Indiana, or Iowa preferred. Have had twenty years experience. Address B-531, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Illinois.

BUSINESS CHANCES

For Sale—New business for shop or factory. Have new patentable steel gas turnace construction. Greater radiation, yet so simple, meets all competition. Would like to hear from firm who might be interested in manufacture and who could give employment to experienced sheet metal worker and furnace installer. Address R-531, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

For Sale—Shop and business established over fitty years; good location; general sheet metal work, heating, and ventilating. Good furnace business. Only one competitor. Good opportunity. Selling on account of death of partner and old age. Will bear close inspection. Address T-530, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

For Sale—Complete up-to-date sheet metal shop equipment for heating and ventilating and general sheet metal work. Power tools for 10 gauge and lighter. Will send list of all tools if interested. Willing to sell cheap for cash. Address Knapper Sheet Metal Co., 218 E. Walnut St., Kalamazoo, Mich. X-531

Wanted—Location for a heating and plumbing business, or would buy a small stock of hardware where shop could be run in connection, or an interest in a going business. Northwestern states, Washington or Oregon preferred. Address P. O. Box Box 473, Harvey, North Dakota.

Wanted—Location for Tin and Furnace business. Would buy going business if it can show business is to be had. Would run shop in connection with Hardware store for owner or as my own if space can be had and fature prospects encouraging. Address Y-530, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

For Sale—Bargain. 90 foot front by 113 foot depth. Located 90 feet east of Lewis and Clark bridge. Want to retire from business is the reason for selling. Address Chris Eckhard, Eckhard Mercantile Co., 512 E. Broadway, Alton, Illinois.

For Sale or Exchange—My property, consisting of two stores, a room specially built for a tin shop, a three-car garage, and a seven-room flat—all modern. Address Emil Siepman, Culver, Indiana. M-531

Sheet Metal Workers desiring to add to their shop work or enter a non-competitive line of large possibilities and profits will obtain information free by addressing Ernest E. Zidek, P. O. Box 695, Stuart, Florida. Z-531

For Rent—Hardware store with fixtures. Splendid farming community in northwestern Illinois. Address W-530, AMERICAN ARTI-SAN, 139 N. Clark St., Chicago, Ill.

MISCELLANEOUS

For Sale—100 lb. capacity acetylene lighting plant, underground type. New—never used. Also No. 270 International round hot water heating boiler, used. Write for prices. Address A. A. Clendenning, Keota, Iowa.

T-531

For Sale—Number of new Mueller side wall and floor registers, register boxes and boots. Wall stacks angles and elbows all sizes. Will sell cheap. Address Knapper Sheet Metal Company. 218 East Walnut Street, Kalamazoo, Michigan.

New Soldering Fluid—Stainless, Odorless and Cheap. Flows freely on all metals except aluminum and badly corroded galvanized iron. Formula, \$1.00. Squaring shear blades ground, \$1.50. Address P. C. Woods, Washington, Iowa. P.531

For Sale—One 26" Canton Furnace Fan, 32 volt motor. Three Sheer Regulators. Will sell at a great sacrifice. Address The Ramey Manufacturing Company, 243 North Fifth Street, Columbus, Ohio.

Wanted—Spot cash for odds and ends of furnaces—also registers. What have you? Address B-532, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill,

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Wanted—An eight or ten foot hand or power used brake to bend ¼" plate. Address Jacob Brenner. 45-47 Third Street, Fond du Lac. Wisconsin. C-530

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For Sale—A Gottschalk "Christie" Furnace Cleaner—like new. Only used on one job. Will sell at great sacrifice. Address Jos. Koubek & Son, 5234 West 22nd Street, Cicero, Illinois. S-530

For Sale—Number 125 Fuller Rapid slitting shears, capacity 10 gauge. Will cut outside and inside circles from 5 to 48 inches. Will also slit straight sheets. This machine is in good working order and belt driven. Cash price, \$175.00 F.O.B. Kalamazoo. Address Knapper Sheet Metal Co., 216 East Walnut Street, Kalamazoo, Michigan. P-530

For Sale—A 72" Box and Pan Brake used only a few weeks. This machine will handle 16 gauge material and weighs around 2000 lbs. Also mounted on heavy casters. Price, \$150.00. Address Chas. Barnum, Mankato, Minnesota.

For Sale—No. 2 Ryerson Lennox Shear, belt drive. Will handle 10 gauge material and will cut circles or straight. Price, \$100.00. Address Chas. Barnum, Mankato, Minnesota.

For Sale—Used tinners bench machines including 30" shear, role and folders; also plumbing tools. Address F-531, AMERICAN ARTI-SAN, 139 N. Clark St., Chicago, Ill.

Wanted—A set of second hand tinners tools and machines. Must be in good condition and cheap for cash. Address Roy K. Davis, 722 West Second Street, Xenia, Ohio.

For Sale—Tinners tools. Cheap. For list and prices write B. P. Friebel, Manchester, Iowa. W-531

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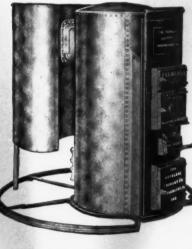
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